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CONTENTS

ORIGINAL ARTICLES:
The Pediatrician Looks at the Tonsil. By R. M. Pollitzer, M.D., Greenville, S. C. 145
Differential Diagnosis of Brights Disease. By James A. Bradley, M.D., Florence, S. C. 151
ANDERSON, THE ELECTRIC CITY 155
EDITORIAL 158
OBSTETRICS AND GYNECOLOGY 160
PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA 161
SOUTH CAROLINIANA 164
BOOK REVIEWS 165

Loose Stools in Infants

require extra diapering, and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

If you have a large incidence of loose stools in your pediatric practice—

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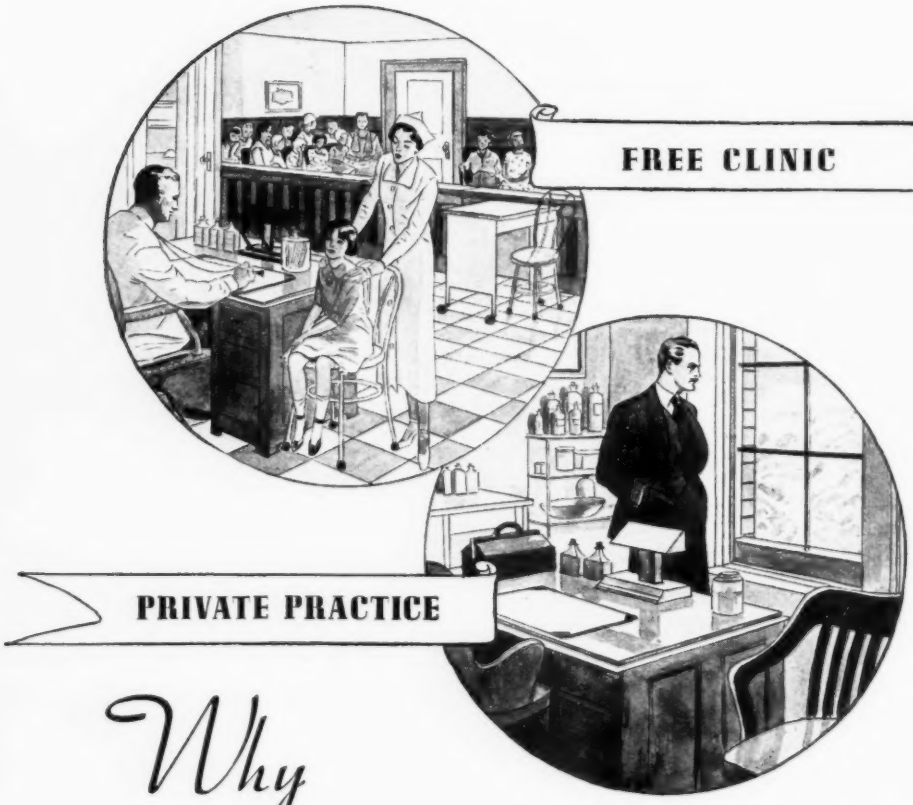

Why

THE KARO BABY PAYS THE DOCTOR

● Every mother craves the very best for her baby. She prefers a pediatrician for the baby's supervision, seeks select foods for his regime, strives for his superior care. Whatever her station in life, maternal devotion means sacrifice for her baby... But when the family means are limited, that sacrifice is at the expense of the doctor. His fee is disbursed for expensive foods, extravagant raiment and the baby taken to the *free clinic*...The Karo Baby pays the doctor. What the mother saves from expensive carbohydrates goes to the private doctor. Karo is the economical milk modifier. It contains the maltose-dextrin every budget can afford. The baby thrives, the mother saves, the doctor lives... Doctor—Be wise—Prescribe Karo for the Baby.

THE JOURNAL
of the
South Carolina Medical Association

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EDITORIAL

CANCER NUMBER

The Journal has never published special numbers without very definite indications, believing that under this plan when the Journal does come out with a special edition it will be considered an important matter and therefore read with keener interest than the average number. We hope this will be the case now. The State Medical Association has always been interested in the Cancer problem and from time to time has taken special action from an educational point of view looking toward combating the disease. It is believed that the plan suggested in this issue of the Journal promises greater results than any plan hitherto pursued for our State. We therefore publish herewith the plans as outlined by the Chairman of the Special Committee.

Special Committee Plans

The House of Delegates last year passed a resolution adopting the five-year program of cancer control and education outlined by the American Society for the Control of Cancer. A State Cancer Committee was appointed consisting of: Dr. J. Richard Allison, Columbia, Chairman; Dr. W. M. Sheridan, Spartanburg; Dr. F. H. McLeod, Florence; Dr. Hugh Smith, Greenville; Dr. Kenneth Lynch, Charleston; Dr. T. R. W. Wilson, Greenville.

This committee met in Columbia, December 21, with Dr. J. W. Cox, Southern Field Representative for the American Society for the Control of Cancer. Dr. Cox outlined to the committee the work being done in other states and made suggestions to the committee for cancer work in South Carolina.

The American Society for the Control of Cancer was organized several years ago by leading cancer specialists in the United States. Soon after its organization, it was given an endowment by J. D. Rockefeller, Jr., which enabled the Society to broaden its scope of work throughout the country. This organization is

a national health organization devoted to cancer educational work.

In no disease is there a more direct relationship between the results of education and successful treatment than there is in cancer. The average practitioner sees very few cases of cancer in the course of a year. The ones he does see are usually advanced and hopeless. This leads to a pessimistic attitude as to what can be done for cancer. The patient, on the other hand, when told that he has a cancer, gives up hope. It is the aim of this national cancer organization to combat this attitude on the part of both the profession and the laity, by an educational program. South Carolina is one of the last states to adopt their program.

The Society's work in other states has been organized into a so-called five-year plan in which they concentrate their efforts each year on some particular phase of cancer work. There are three locations of cancer where early diagnosis can usually be made because of our knowledge of certain conditions that are likely to change to cancer. These so-called preventable cancers are, cancers of the skin, breast, and female reproductive organs. The educational program of this society up to the present time has therefore been centered particularly on these three types of cancer. This Society will furnish to the State Cancer Committee first—literature on various phases of cancer work. This literature has been compiled by cancer experts for distribution to physicians and lay organizations. These pamphlets are available for medical societies and for each physician in quantities sufficient for distribution to his patients. Second—lantern slides, moving pictures and illustrated lectures which have already been placed with the Chairman of the State Cancer Committee.

The best method of using the material furnished by the national society and the information they desire the physician and laity to have, was discussed at the State Cancer Committee meeting, the ultimate aim being that each district and County Medical Society at some time in the near future have a meeting devoted either partly or wholly to cancer; that some member of that Society or a member of the Cancer Committee present this material and information to the Society. The American Society will furnish to each of these meetings reprints of articles by Cancer Specialists designed for their information and pamphlets designed for their patients. Any district or county society desiring to hold such a meeting may communicate with the Chairman of the State Cancer Committee who will make arrangements to send the moving picture from Columbia; instruct the National Society in New York, the kind and quantity of literature needed at this particular meeting; and request them to send it to the President of that society on a certain date; the Chairman of the State Committee will designate a member of the Cancer Committee to give this demonstration or the local Society may appoint one of their own members.

It is the opinion of the National Society that such meetings are valuable and helpful to all physicians. There are certain facts emphasized in these pictures and reprints which, even if you know, often need to be called again to your attention. Such a meeting as described above, was held in Columbia. The Columbia Medical Society devoted its entire program to the cancer subject. The nurses and public health officials were invited. The meeting was well attended, a great deal of literature was distributed, and we believe that such meetings will serve to advance the early diagnosis and cure of cancer in South Carolina. The State Cancer Committee is willing to help any medical organization in the state in putting on such a cancer program. The American Society for the Control of Cancer is willing and anxious to furnish the material and literature; other states are carrying on this work and doing better cancer work as a result of such meetings. The opportunity is here, and I hope you will take advantage of it.

Dr. Cox stated to the Committee that it had been the experience of other state committees that it took much work and in many instances, several years to get such programs before the majority of the county organizations. Dr. S. E. Harmon, President-elect, and Dr. E. A. Hines, Secretary, were present (at the urgent invitation of the Chairman). Dr. Hines made the motion that the January number of the State Journal be made a cancer number and that this article describing the aim and actions of the Committee be published in the Journal. Dr.

Harmon suggested that the Councillor from each district be asked to aid in the cancer work, not only by actual work but by suggesting certain men in this district who would be interested in cancer and aid in arranging programs. This suggestion was adopted by the Committee. The National Society desires that the State Committee appear before certain lay organizations, giving lectures and literature carrying out their programs of education on cancer, particularly to women's clubs and men's civic clubs. Such work is already under way in other states. No doubt our state committee will be called upon for such information. Already your State Chairman has been furnished with films, literature, and newspaper articles designed for the education of the laity. Your state committee is of the opinion that our efforts should first be directed to the physicians of the state. Give them the opportunity to be well informed on all the knowledge of cancer education and its prevention. If they will not take advantage of this educational program, then the laity will naturally seek the physician who is informed on the subject. Your chairman will appreciate help and suggestions for the success of this work.

J. R. Allison, M. D., Chairman
S. C. State Cancer Committee.

TRIBUTE TO DR. ROSSIE R. WALKER

Dr. Rossie R. Walker was born February 14th, 1885, in Haywood County, North Carolina. He did his preliminary college work at Davidson College in North Carolina. From Davidson he went to the University of Kentucky and there pursued his course in medicine. After his graduation from the medical school, he began his practice and life's work in Laurens and Watts Mills. For some twenty years he labored faithfully and nobly among the people. His chiefest aim in life was to serve, and this he did in the spirit of our Lord who came not to be ministered unto, but to minister. His work covered a large field and he numbered his friends in the hundreds. Hundreds have been made well through his kind and faithful attention. He took no thought for himself, because he was always too busy thinking of others. He was naturally modest and retiring, never seeking publicity for himself. There are many of his good deeds known only to the All-seeing Eye of the Universe. He made no compromise with the wrong, and the spirit of righteousness controlled his every act and thought. An intense loyalty to his friends was one of his leading characteristics. Friendship to him was a sacred possession, and many of his friends leaned upon his council, wisdom and advice. He proved himself to be a man of superior judgment and few words, and to know him intimately was to love him as a brother.

His Church was one of the leading interests of his life. He loved the Lord's Sanctuary, and his presence was there every Sunday unless he was by all means providentially hindered. The Church cause lay heavily upon his heart and he gave of his material possessions to advance the Lord's work. He was a liberal giver, but sounded no trumpet when he presented his offering. He preferred no praise and had rather his donation be kept a secret due to the fact that he was giving for the glory of God, and not for the praise of man in this life. He desired God's praise in the Holy City of eternal glory. His church shall miss him as times rolls on, and there is not another to take his place.

His family and home were the supreme joys of his heart, and he loved the sweet rest, quiet and companionship that his home had in store for him when the toils of the busy day were ended. He may well be spoken of as a loving, affectionate and understanding husband, a kind and sympathetic father, and an ideal man in every respect.

We can truthfully say that he lived to serve, and he served while he lived. Just before he fell asleep to awake from his labors, he made several calls and had given aid and advice to those who were in the clutches of ill health.

To his wife and children, his father and brother and sister, and all the other relatives and loved ones, we extend the deepest sympathy that our hearts are capable of extending. Their grief is, in part, our grief. We join hearts and hands with them while we look through the clouds into the face of Him who conquered death, and we hear Him saying: "Fear not, I am the First and the Last. I am He that liveth and was dead; and behold, I am alive forever more, and have the keys of death and the grave." "I am the resurrection and the Life; he that believeth in me though he were dead, yet shall he live." "Lo, I am with you always." "Let not your heart be troubled . . . . I will come again and receive you." In the dark hour of death Christ is our one supreme and sufficient refuge. He has tasted death for every man, and one day He is coming back to destroy death, and to gather His own to Himself.

We would not call our loved ones back to earth again even if we could. They have finished their task on earth, and have gone on to be with the Lord, and to rest from their labors. Dr. Walker lived in the spirit of Christ. As it was spoken of Christ: "Greather love hath no man than this, that he lay down his life for his friends;" even so may we

(Continued on Page 19)

PRESIDENT'S PAGE

The New Year opened under promising conditions for the South Carolina Medical Association.

At the close of the fiscal year December 31, 1934, the membership roll had about returned to normal. The Treasurer reported the finances in a satisfactory condition. The Journal has suffered in common with most other State Journals and other magazines from a loss of advertising receipts during the depression. It is a source of gratification that the receipts are now improving. It has been necessary to limit somewhat the size of the Journal from time to time, but it is expected that the Journal will soon return to normal in this regard.

At this time all of the members of the Association are looking toward the annual meeting to be held at Florence, April 23, 24, 25. I am glad to report that the committee on Scientific Work has been very active and the program promises to be of unusual interest. The personnel of the Scientific Committee is Dr. W. R. Mead, Florence, Chairman, Dr. James McLeod, Florence, Dr. J. P. Price, Florence.

This committee together with the President and Secretary of the Association held a meeting at Hartsville on January 10 and completed many details of the coming annual meeting.

OUR INVITED GUESTS

We are extremely fortunate this year because of the great distinction enjoyed by our guests. Their names are as follows: Dr. J. H. Stander, Professor of Obstetrics and Gynecology at Cornell University Medical School, New York; Dr. T. S. Fay, Professor of Neurological Surgery at Temple University, Philadelphia; Dr. W. B. Castle, Associate Professor of Medicine at Harvard Medical School, Boston, Mass.

POST GRADUATE COURSES IN OBSTETRICS

I bespeak the loyal support of every doctor in South Carolina for the Post Graduate Courses in Obstetrics to be given under the auspices of the State Association by Dr. J. R. McCord, Professor of Obstetrics at Emory University. These lectures will begin at Anderson, April 15. They will be held in various sections of the State.

PATHOLOGICAL CONFERENCE REPORTS

Beginning in February the clinico-pathological conference reports at the Medical College will appear in the Journal. These reports will be along the lines of the well known Cabot case histories. Dr. Kenneth M. Lynch will be the editor.

WILLIAM EGGLESTON.

ORIGINAL ARTICLES

Macrocytic Anemia

By Robert Wilson, Jr., M.D., Charleston, S. C.

The great strides made during the past decade in the knowledge and treatment of the anemias have emphasized the necessity for closer attention to exact diagnosis. In our older classifications, the anemias were arbitrarily divided into Primary and Secondary, but with increasing knowledge, the two groups were further divided and subdivided until such a maze of diagnostic possibilities were offered that the finding of the correct subgroup in which to place any particular case became a very difficult procedure. However, during the past few years, the pendulum has swung back in the direction of simplicity. Largely through the efforts of Wintrobe(1), mathematical formulae have been evolved expressing the ratios between the hemoglobin, red cell count, and volume index of the blood, which enable us to determine the relative size and hemoglobin content and concentration of the individual red cell. The various etiological factors involved in the production of these different manifestations of the blood have, to some extent, been ascertained, and therefore it is now possible through the use of these methods to arrive at a much clearer understanding of any particular case of anemia of obscure origin.

The Marcrocytic Anemias, with which we are concerned today, comprise all of the anemias in which the average size and hemoglobin content of the red blood cells are greater than normal. The classic example of this type, of course, is Pernicious Anemia, the clinical picture of which is quite definite and needs no description. Anemia of this type is also found at times in Pellagra, in Sprue, and in chronic dietary deficiencies of certain types. Infection with the Fish Tapeworm, *Diphyllobothrium latum*, gives rise to a blood-picture of the macrocytic type. "Pernicious Anemia of Pregnancy" has recently been studied by Strauss and Castle(2); there are reports(3) of a "Tropical Macrocytic Anemia" which is regarded as not at all uncommon in India, complicating pregnancy in a considerable proportion of cases, but occurring in non-pregnant individuals rather frequently. Finally, macrocytosis is sometimes the characteristic blood finding in cases of Aplastic Anemia. All cases may be said to have the "blood picture of Pernicious Anemia," but other clinical findings rule out the latter as a diagnostic possibility. However, there is probably one factor common to all cases, which will be considered after taking up the three cases to be reported.

Read at a Clinic presented before the South Carolina Medical Association, Charleston, S. C., May 2, 1934.

Case Reports

The first case to be presented is that of a 48-year-old colored woman, who was sent to the Roper Hospital early in August, 1933, because of an infected hand of two weeks duration. Over the course of the previous eight months, she stated that she had had an intermittent diarrhea, characterized by the passage of a large number of watery stools, periods of intense diarrhea alternating with shorter periods of relative freedom from this symptom. At no time was any blood noted in the stools, nor did the patient think that there had been any unusual amount of mucus. During this time, she had been on a very poor diet, predominantly carbohydrate, with little meat, milk, or green vegetables. No other symptoms were noted, except for moderate loss of weight, and polydipsia of two years duration. There was no history of skin lesions having appeared on the hands or feet at any time in the past. Physical examination showed: Weight 100 lbs. The patient was rather emaciated, with dry, loose and wrinkled skin, giving evidence of moderate loss of weight. The mucous membranes were pale, dental caries present, the tongue normal. There was generalized glandular enlargement. The lungs were reported clear, the heart normal. No organs or masses

were felt in the abdomen. The extremities were negative on examination, except for a palmer abscess of the left hand, and there was no roughening or ulceration of the skin. No arteriosclerosis was noted. Blood pressure 136/86.

The patient was found to have rather severe Diabetes, with large amounts of sugar in the urine, and hyperglycemia, which required insulin for regulation. The infection of the hand was slow in subsiding, but after about two months stopped draining and gradually healed.

The examination of the blood, in which we are particularly interested, showed, on admission (August 5th):

Hemoglobin, 48 per cent (Sahli), 7.48 Grams 100 cc.

R. B. C., 2, 185,000.

Vol. per cent Cells, 24.8 per cent.

M. C. V., 111.8.

The Color Index was 1.14. A blood smear examined by the Halometer gave a reading which was interpreted as showing a decided increase in the average size of the red blood cells. The Gastric Analysis showed a reduction in acidity, Free Hydrochloric Acid being 5 degrees, Total Acidity 15 degrees.

The patient's diabetic condition made it impossible to give her an indiscriminate diet, but she was begun on one containing 47 grams of protein daily, with the addition of 1 pint of an aqueous extract of fresh liver, prepared according to the method of Castle and Bowie(4), one-half ounce of Brewer's Yeast twice daily, and Blaud's Mass with Copper Arsenite, 15 grains, three times a day. Bismuth subcarbonate was given in addition to the measures outlined above, and the diarrhea was entirely relieved. After three weeks, the hemoglobin had risen to 73 per cent, the red cell count to 3,440,000, and continued steadily upward until Oct. 16th, when the hemoglobin was read at 94 per cent, with 4,490,000 red cells. The patient remained in the hospital until Dec. 21st, when she was discharged with instructions to continue her diet ry treatment at home. Because of economic difficulties, this was impossible for her to carry out, and she returned for further diabetic regulation on March 19th. The hemoglobin had fallen to 68 per cent, the red cell count to 3,360,000. Physical findings in the chest led to an X-ray examination, which disclosed definite evidence of Tuberculosis. The sputum was likewise positive, and after two weeks of downward progression, death took place on April 1st.

It is interesting to note, in the following examinations of the blood made at intervals, that at the time of the patient's first admission to the hospital, the hemoglobin was at its lowest level and the Mean Corpuscular Volume at its highest. With the rise in hemoglobin and total red cell count to normal, the M. C. V. likewise returned to normal limits. And on the patient's return after three months at home with inadequate treatment, the M. C. V. had again risen to a figure slightly above normal (102.2) simultaneously with the fall in hemoglobin and red cell count.

Pathological diagnosis at autopsy was Chronic Pulmonary Tuberculosis of the ulcerative type with tuberculous pneumonia; fibrosis of the pancreas; central lobular necrosis of the liver. Other organs, including the intestines, showed no pathological lesions.

The next case is that of an 82-year-old white man who had had intermittent attacks of diarrhea of of a rather mild nature for two years previous to the onset of his final illness. These, however, were by no means particularly debilitating, and he was in fairly good health, despite his age, until November 1933, when a rather typical attack of Bronchopneumonia began. An examination of the blood at that time disclosed changes in the appearance of the red blood corpuscles, which led up to more complete study, after the patient had entirely recovered from the pulmonary infection, about ten days later. This showed (on Nov. 25th):

Hemoglobin, 68 per cent (Sahli), 10.6 Grams —100 cc.

R. B. C., 3,380,000.

Vol. per cent Cells, 36.39 per cent.

M. C. V., 107.6.

In the smear, the red cells showed moderate increase in size, some macrocytes, a few tailed forms, and moderate variation in size and shape. All cells appeared to be well-filled with hemoglobin. No nucleated red blood corpuscles were seen. The Color Index was 1.1. Reticulocyte count showed less than 0.3 per cent.

There was no increase in the bile pigment of the blood plasma. The white cell count and differential were normal, except for 10 per cent eosinophils, this being attributed to convalescence from pneumonia.

Other laboratory findings included three bacteriological examinations of the stools, in all of which *Giardia lamblia* were present in considerable numbers; no amoebae were found. The gastric analysis showed reduction in acidity, free HCl being 7 degrees, total acidity 25 degrees. The urine was negative on many occasions. An X-ray of the gastro-intestinal tract, taken in March 1933, had been reported as negative.

The patient's diarrhea was persistent for the entire time after the onset of the first attack of pneumonia, stools varying in number from 5 to 14 daily. Because of the mild anemia of the macrocytic type, he was started on Liver Extract by intramuscular injection, and received a total of twenty such injections, 2 cc each, between Nov. 28th and Dec. 23rd. After he had been given the first ten doses of Liver, a reexamination of the blood showed:

Hemoglobin, 76 per cent (Sahli), 11.85 Grams/100 cc.

R. B. C., 4,150,000.

Vol. per cent Cells, 37 per cent.

M. C. V., 89.0.

The course of treatment with Liver Extract had no apparent effect on the patient's diarrhea, but did make him feel somewhat better subjectively. The diarrhea responded to some extent to Paregoric and Bismuth, but because of its persistence, the possibility of *Giardia lamblia* having some part in its etiology, and the chance of its being helped by Emetine, a course of treatment with the hydrochloride of Emetine, given by hypodermic injection, was begun on Dec. 23rd and continued until Jan. 13, 1934. A total of 10 grains of the drug had been so administered in half-grain doses, when the development of a neuritis necessitated its discontinuance. A few days later the patient again developed Bronchopneumonia, with cough, fever, and definite signs of consolidation in the lungs; from this there was no chance of recovery and death took place on Jan. 23rd.

The third case is that of a 26-year-old white man, who was admitted to the Roper Hospital on June 5th, 1933, with a story of swelling of the feet and ankles of three weeks duration. He had been in excellent health up to that time Other symptoms included some shortness of breath on exertion, a poor appetite, and the patient's friends had told him that his color had become quite pale. The history was otherwise negative; he had no regular occupation, and had been exposed to no industrial hazards. Positive physical findings included pallor of the mucous membranes, a sallow complexion, a slight icteric tint to the skin, enlarged and chronically infected tonsils, a systolic murmur at the apex of the heart, and moderate pitting oedema of the feet and ankles.

Admission laboratory examinations (June 7th):

Hemoglobin, 22 per cent (Sahli), 3.45 Grams —100 cc.

R. B. C., 840,000.

Vol. per cent Cells, 11.81 per cent.

M. C. V., 140.0.

The Color Index was 1.37. In the smear, the red blood cells showed considerable variation in size and shape, and many macrocytes were present. The Halometric reading likewise indicated a considerable increase in the average size of the red cells. White cell counts varied from 3,700 to 5,100, later rising to 8,100. The differential counts were normal. Urinalysis negative, no urobilin present. There was no blood in the feces Wassermann reaction negative. The Icteric Index was 5.8. Gastric analysis showed some reduction in acidity, with Free HCl of 7 degrees and total acidity of 23 degrees.

On admission to the hospital, the patient was placed on a high protein diet, with additional cooked liver. Blaud's Mass, twenty grains three times daily, with Copper Arsenite and Strychnine, were also prescribed. A donor was obtained, and three days after entry 400 cc of whole blood given by transfusion. The patient was not entirely cooperative, did not take his diet at all well, but did manage to eat liver almost every day. Reticulocyte counts were done at intervals, and showed a rise from 2 per cent on June 10th to 6.3 per cent on June 16th, a definitely sub-maximal response. Repeated blood counts showed a gradual rise in Hemo-

globin content to 41 per cent, and R. B. C. to 2,680,000. A check-up on the Mean Corpuscular Volume of the red blood cells, however, showed no change, remaining at 140 two weeks after entry. Because of the patient's refusal to take his diet properly, Liver Extract was given by intramuscular injection, 2 cc daily being administered during the patient's last two weeks in the hospital. Practically no effect was noted from this change in the method of therapy, reticulocyte response reaching only 3.5 per cent and there being little change in the hemoglobin and red cell counts. The oedema of the feet persisted for about three weeks, but gradually diminished and had disappeared before discharge from the hospital. The patient felt a great deal better as a result of treatment, even though his blood was still quite low, and insisted on leaving the hospital against the advice of the attending staff on July 1st, 3 1-2 weeks after admission.

Discussion

While the three cases just presented differ from one another in some respects, all possess certain features in common. Although the degree of anemia showed considerable variation, macrocytosis was present in all instances. It is true in general that the degree of anemia and of macrocytosis run parallel, and as the hemoglobin content of the blood approaches normal, the more nearly normal does the average size of the red blood cells become, and this was borne out in the cases studied. Gastric analysis was performed in all cases, and in all showed considerable diminution in the amount of free hydrochloric acid present, as well as in total acidity. The discussion naturally turns to a consideration of the cause or causes of the anemia in our cases. Is the finding of a macrocytic anemia merely coincidental, or is there a common etiological factor, present in all? The first patient had definitely proven Pulmonary Tuberculosis, in addition to Diabetes, the former of which had probably been present for some time before a diagnosis was made. But the anemia usually associated with Tuberculosis, and with almost all chronic infections, is commonly "secondary" in type, with a color index below 1.0, small red blood cells and low hemoglobin concentration. In the second case, infestation with *Giardia lamblia* was noted, but this intestinal parasite is regarded as non pathologic, and has not been reported as giving rise to anemia of any type. And in the third case, no cause whatsoever can be found to explain the degree of anemia. In all, therefore, an analysis of the blood-picture is necessary before we can arrive at any definite conclusions.

In order to reach a clear understanding of the mechanism of production of anemia in general, and of macrocytic anemia in particular, it is worth-while for a moment to consider the factors involved in the maintenance of the blood at its normal level. These are six in number:

1. Properly-functioning bone-marrow.
2. An "Intrinsic Factor" (Hormone) in the stomach contents.
3. An adequate diet, containing sufficient quantities of
   a. Iron
   b. Protein
   c. The "Extrinsic Factor"
4. Proper absorbtion of the products of metabolism.
5. Integrity of the vascular channels, with absence of any opportunity for chronic blood loss.
6. Normal red blood cells (i. e. Hemolytic Jaundice).

It is only with the first four of these factors that we are immediately concerned; the anemias that result from the chronic loss of blood externally, or from the abnormally great destruction of faulty red blood corpuscles, are practically always of the microcytic hypochromic types. The classical example of macrocytic anemia, Pernicious Anemia, has been found(5) to result from the absence from the stomach contents of the so-called "Intrinsic Factor." In the normal individual, this factor interacts with the "Extrinsic Factor" contained in the diet to form some product of metabolism which, after absorbtion, is used by the bone-marrow in the elaboration of normally-sized red blood cells. It follows, therefore, that the lack of this necessary substance in the diet of the individual, or the failure of absorbtion of the product of their interaction, would give rise to a blood dyscrasia simulating the blood-picture of Pernicious Anemia, just the same as if the stomach factor were at fault.

If we now go back to a consideration of our

patients, it becomes clear just why this type of blood-picture should have developed. The first patient, the colored diabetic, had been on a very poor diet for some months previous to her admission to the hospital, and all this time had had considerable diarrhea as well. The presence of free hydrochloric acid in the stomach contents, even though in diminished amount, indicates that the "Intrinsic Factor" was not entirely absent, and rules out the possibility of a diagnosis of primary Pernicious Anemia. But even though some of the necessary metabolic product was most probably being elaborated in the stomach, its diminished amount (due to an insufficiency in the diet) was not enough, in the face of the intermittent diarrhea, to meet the demands of the bone-marrow, and the resultant macrocytic blood-picture was expressive of this deficiency. Although no conclusions can be drawn from the response of the patient to treatment, as she received iron and yeast as well as Liver Extract, it is most likely that the latter was largely responsible for the prompt and adequate rise of the hemoglobin and red cell count to normal limits. While the second patient had been taking a sufficient diet all along, persistent diarrhea operated so as to bring about approximately the same end-result. Response to treatment in this case bore out this supposition; although the total rise in hemoglobin was not very great, the initial level was much higher, and along with the increase in hemoglobin and red cell count came a prompt reduction in the average cell volume to normal. In the third case, a somewhat different clinical picture is presented. Even though there was reduced acidity of the stomach contents, and therefore possibly a reduction in the amount of the "Intrinsic Factor" present, the patient's blood-picture would have remained normal if there had been no disturbance of bone-marrow function. This case must be regarded as one of an Aplastic type of anemia—from what cause is unknown—but failure of response to any and all of the blood-stimulating drugs signifies that inadequacy of bone-marrow function was the underlying etiological factor.

The use of these methods for the determination of the average size of the red blood cells, by means of the halo test or with hematocrit readings, is essential in all but the most obvious cases of anemia if we are to be able to classify them in the light of the newer knowledge of the blood in all of its normal and pathological characteristics, if we are to be able to arrive at a correct etiological diagnosis, and if we are to direct our therapeutic procedures intelligently. A diagnosis of Pernicious Anemia, or of any of the related macrocytic anemias, points very definitely to the therapeutic indication for liver extract. The presence of abnormally large red cells in the blood stream is the way by which the body expresses the lack of one of the factors necessary to maintain the blood in its normal state. Liver extract supplies this deficiency, and when administered in sufficient amounts, corrects the abnormality of the blood. If we disregard this sign, or if we do not look for it, we are not giving our patients all that we should be able to offer them. On the other hand, if examination of the blood discloses no intimation of this deficiency, if all tests point against an increase in the average size of the red blood cells, there is no direct indication for the use of liver, and to prescribe it in such a case is economically wasteful, both because of the relatively high cost of the drug, and because while giving it we are apt to neglect other therapeutic measures that might otherwise hasten the recovery of the patient.

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Cancer of the Cervix

By O. D. Baxter, M.D., Sumter, S. C.

Cancer of the cervix of the uterus can be cured in a majority of cases if treated early and thoroughly by radiation.

To treat early, the condition must of course be seen and diagnosed early. Routine examination of the cervix of all female patients during the cancer age, even though they have no symptoms, and the education of women to present themselves for examination seems to offer the greatest chance of survival. It is evident to those who have seen and treated many patients with this condition that, until some more effective method of dealing with carcinoma is discovered, prophylaxis and early treatment are the two most important factors in treating this disease successfully.

A number of factors lead the patient to neglect seeking medical advice early. Among the most common are the inherent fear of cancer and the common belief that it is incurable, the mildness of the symptoms and the fact that a discharge of some sort has probably been present for years, for cancer rarely develops upon a normal cervix. A slight alteration in the character of the leukorrhea may be overlooked or regarded as of no moment. Atypical bleeding is often attributed to menopausal disturbance. The chief reason, however, is probably the painless character of the symptoms. In point of fact, during the early stages of the disease the symptoms are few, mild, insignificant, or entirely absent.

Incomprehensible as it may seem, one of the chief reasons why physicians fail to recognize the condition is their failure to make a pelvic examination.

There has recently been developed an aid in the diagnosis of early cancer of the cervix that can be done by anyone, anywhere; namely, the use of Lugol's iodine solution (The Schiller Test). To make the test, place the patient in the lithotomy position, bladder empty, with the foot of the table slightly elevated. Introduce a vaginal speculum and expose the cervix and cleanse it and the upper vagina of the mucus and discharge and inspect the area carefully under good illumination for comparison later. Instill into the vagina about half an ounce of Lugol's Solution and swab to insure that the solution is brought in contact with the entire vaginal cervix. In about a minute lower the table and remove the excess iodin with cotton. Now inspect with a good light.

The information obtained is the result of the work of Lahm, who showed that the normal superficial layers of the vaginal and cervical epithelium contain large quantities of glycogen, and therefore stain a deep mahogany brown with Lugol's solution. The cancer cell has no glycogen, and a loss of staining properties occurs in the earliest stages of cancer. Negative results, i. e. a uniform brown stain with no unstained areas, are a fairly positive indication that carcinoma is not present in the area which has been exposed to the iodine. Unstained areas, however, are not positive evidence that cancer is present. Simple erosions from which the investing epithelium has been denuded and erosion in the early stage of healing and covered with cuboidal epithelium do not stain. Hyperkeratosis, traumatic desquamation, or any benign lesion which has removed the normal superficial layers of the vaginal and cervical epithelium are iodine negative. In other words, iodine-negativity and carcinoma are not always identical. A negative iodine test then can only attract attention to the areas and indicate the location from which tissue should be collected for microscopic examination. The symptoms, vaginal examination and the iodine test are but presumptive evidence; in all really early cases, however, the court of final resort is the microscope, employed by a competent pathologist. Competent pathological examinations are available to every one in our State, and there is no excuse for this work being done by the inexperienced. The only flaw in this plan for 100 per cent early diagnosis is that the area of malignancy may not be included in the collected specimen. It requires some experience to collect the proper specimen, but the iodine test, if carefully applied, will be of inestimable value in pointing out the most suspicious areas. Carcinoma of the fundus and of the ovaries may cause abnormal bleeding and must be kept in mind when the cervix is normal and suggestive symptoms are present.

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The most successful treatment for any disease is to prevent it. Unquestionably, nonmaglignant disease of the cervix, particularly the so-called erosions or chronic endocervicitis predispose to the development of cancer, and should be viewed with suspicion as a pre-cancerous lesion. Endocervicitis develops on an injured cervix. Repair of the lacerated cervix of the uterus at the time of injury seems to be a procedure that is almost entirely neglected. The treatment of the erosions or endo-cervicitis is not a technical or difficult procedure, and the results are most successful. Records show that cancer is practically eliminated in those patients whose cervices have been cleaned up. As a matter of fact the prevalence of cancer can be greatly reduced by proper care of the nonmalignant disease of the cervix. A study of the combined records of Hunner, Pemberton, Smith, Bland, Graves and others show that of more than 25,000 patients who were treated by surgery or cauterization for cervical lesions only 15 had developed cancer 10 years or more later. The same paper quotes statistics which reveal, that of 2255 cases with cancer of the cervix only 33 had received adequate treatment for chronic cervical lesions.

When the diagnosis is made early there might be some question as to the method of treatment. For the last ten years surgery has been practically discontinued by those who have treated many of these cases and have observed their results closely. Surgery is no longer used in the larger centers. It is possible that, as a result of earlier diagnosis, trachelotomy and radiation may be advisable in selected cases. However, because of the tendency to early metastasis treatment by radiation (i. e. radium and X-ray) is unquestionably the therapy of choice at the present time. The actual technic is not standardized. Different radiologists use different methods but the fundamentals must be the same. The most successful method depends upon a relatively small dose of radiation, heavily filtered, applied over a relatively long period of time. Any living cell, whether malignant or not is most radio-sensitive during certain stages of mitosis, or cell division. A given amount of radiation from radium or an X-ray tube can destroy any cell in the dividing stage and the adjacent adult cells show little or no change. Because the cancer cell is dividing at a rather rapid rate, it can be killed by radiation without destroying its host. The treatment then is to apply radiation of sufficient amount to destroy the malignant growth and not the surrounding tissue, and no more. This sounds rather simple, but because of many factors it is, in many instances, almost impossible. For instance, almost any primary lesion of the skin, mouth, breast, or uterus that is found early can be destroyed by radiation or removed surgically, but if the adjacent lymphatics are involved, the problem is more complicated and often hopeless. Superficial lesions can be destroyed by the caustic or unfiltered rays, especially if the surrounding adjacent tissue is not essential for life. If, however, the rays must penetrate normal tissue to reach the malignant growth, again the problem becomes complicated.

The general condition of the patient is a factor of great importance. That one of the results of radiation is the development of cancer resistance or of a cancer fighting property in the surrounding normal tissue is a widely accepted theory. If the cancer host is below par, then this fighting property is lessened and may theoretically result in failure. Certainly, by experience we know that when the Hemoglobin is below 50 per cent, the patient is not going to stand radiation well and in my practice it has been necessary to interrupt the treatment in several instances. Inflammatory reaction in and around a malignancy, particularly of the cervix, lessens the chance of a cure. Inflamed tissue does not respond to radiation as well as when the area is clean. In fact, even when time appears to be a factor, it will pay to use antiseptics, etc. and clean up infected lesions. Therefore it is essential that the below par patient be given general treatment, building up her condition and increasing resistance, before radiation is attempted. It is also necessary that inflammation and infection be reduced to a minimum before radiation treatment is started.

The application or administration of any form of non-surgical therapy has as a basis the same dosage unit, or amount of the agent applied or administered. In radiation the physical unit is called the "r" unit. Another amount or unit is called the "Skin Erythema Dose."

The relations between the two are constant, provided all the factors of measurement are constant. The S. E. D. is the amount of radiation either from radium or an X-ray tube which will produce a definite tanning or bronzing of the skin of 80 per cent of the individuals exposed, the other 20 per cent showing no skin change. Cancer of the cervix requires about 10 S. E. D.'s to destroy the abnormal cells. How to apply this much radiation without destroying the skin and surrounding pelvic tissue and at the same time irradiate the lymphatic drainage from the involved area is the problem confronting the radiologist. It can be done but, not without a thorough knowledge of anatomy of the pelvis and of the fundamentals of the application of radiant energy. Ofttimes a great deal of ingenuity is necessary to properly apply the radium applicators, for many times it is impossible even to find the os or cervical canal. Especially is this true in the later stage of the disease.

Believing that a detail description of the technical application would be tedious and to some extent uninteresting, this discussion will only be concerned with the general idea of small amounts of radiant energy, heavily filtered, applied over a relatively long time.

To treat carcinoma of the cervix both radium and the Roentgen rays should be used unless we can be positive that there is no glandular involvement, when radium alone may be used. The radium is placed in tubes or capsules, inserted into the uterine canal, applied against the vaginal cervix and placed wide in the lateral fornices. Applicators are available to accomplish this. In the uterine canal the tube or capsule holding the radium should have a wall thickness of at least one millimeter of platinum or its equivalent, and those in the vagina should have a wall thickness of at least one and one half millimeters of platinum or its equivalent. From 60 to 70 mgm of radium element is all that is necessary to use. The exposure time should amount to at least 5000 mgm hours, that is, if 60 mgm of radium is used, it should be applied for more than 80 hours. Sixty mgm for 80 hours would be 4800 mgm hours. As much as 9000 mgm hours can be given safely if the thickness of the platinum wall of the applicators is increased one half to one mm more than the above.

In addition to radium every patient should have at least two series of X-ray deep therapy. The equipment should deliver full 200 thousand volts. The X-ray treatment should be given in divided doses, using at least three exposures to the S. E. D. Filters of at least one half mm of copper placed between the target and patient are essential. The trend is towards more filtering rather than less. The time necessary for adequate treatment is about three weeks, seven to ten days of which should be spent in a hospital.

If the diagnosis is made early and the patient is treated skillfully and thoroughly, what results do we expect to obtain? What can we tell the referring physician, the patient or her relatives as to her chance of being permanently relieved of the condition which is popularly considered incurable? The statement that more than 50 per cent will survive the disease five or more years can be honestly and conscientiously made. In a few of the larger clinics of Europe and America the records show that 75 per cent or more have lived beyond the five year period without return. The statistics showing five year cures of moderately and far advanced cancer of the cervix are very disappointing, being below 10 per cent, taking those of the world at large. The statistical comparison of the salvage ratio of early and late cancer of the cervix is worthy of our most earnest consideration. Diagnose cancer of the cervix early and save the patient.

In review we have tried to stress early diagnosis and have described the Schiller or iodine test in some detail, and we have tried to discuss briefly the fundamental principles on which the thorough and successful treatment of cancer must be based.

WANTED: Position as laboratory technician. Graduate of Allen-Sandlin School of Laboratory, Louisville, Kentucky, and have had some post-graduate work. Would accept position in doctor's office. Best of personal references furnished. Miss Myrtle Eaddy, Leo, S. C.

Precancerous Lesions And Early Cancer

By William M. Sheridan, M.D., Spartanburg, S. C.

Ewing(1) says, "The term cancer includes a group of diseases and that no single cause for cancer has ever been found. It is not due to any microscopic or ultramicroscopic germ or parasite." The animal experiments of Maude Slye(1) have suggested that heredity plays a part in the causation of cancer. Some persons inherit an immunity and others a susceptibility to cancer. When cancer is present on both sides of the family, this hereditary tendency is more pronounced. Offspring of cancer families should marry into non-cancer families. Eugenics will thus aid in reducing the incidence of cancer. Although the exact cause of cancer is still unknown, it has been found that chronic infection and chronic irritation play an important role.

Skin

Cancer of the skin usually develops in persons with thin, dry skins who are exposed to the sun, wind and cold. Farmers, carpenters, brick masons, laborers, and those who live out of doors most of the time are more apt to develop skin cancer than those who work indoors. The outer layer of the skin begins first to show thin, greasy scales. Later crusts develop which are called keratoses and are precancerous. After several months the crusts will drop off and the patient usually notices that a raw spot is present which bleeds easily. After a few days the crust reforms and drops off again. If the patient is observant, he will notice that the ulceration is larger. After a number of months the ulcer develops a hard border and is usually recognized as skin cancer. Application of cold cream or vaseline to the face and hands each night often prevents the formation of additional precancerous lesions.

Eye-glass frames which are not properly adjusted constantly irritate the skin of the nose, cheek, temple or auricle and sometimes cause cancer. It is important that these frames be properly adjusted so that no undue pressure or irritation will be produced on any part of the skin. Warts and moles which are subject to continual irritation should be widely removed with the electric needle and excised. Daily cutting of warts or moles while shaving stimulates growth. Warts or moles which are rubbed by the hat band, brassiere, corset, waistband, or shoes, should be removed with the electric needle or excised. If there has been recent growth, x-ray and radium treatments should also be given. Black pigmented moles are very dangerous and should be widely removed.

Skin cancers may also begin as nodules. These nodules usually appear on the cheek and back of the hands and are much more serious than ulcerations. Skin cancers are usually readily curable by means of radiation. McKee(2) states that 97 per cent of skin cancers may be cured with x-rays and radium when treated early. These statistics have been corroborated by several thousand dermatologists and radiologists.

Mouth

Pyorrhoea, abscessed teeth, tobacco (smoking or chewing) fillings, crowns, bridges, or plates with rough or sharp surfaces or margins produce thickening of the epithelial layer, leucoplakia, ulcerations, warty growths or fissures and are predisposing causes of cancer of the lip, inside of the cheek, tongue, and floor of the mouth.

Breast

Multiple, discrete tumors of the breast are usually fibroademomata. Dimpling of the skin and retraction of the nipple usually indicate carcinoma. Cancers of the breast are usually hard. Cysts sometimes fluctuate. A single lump in one breast in a woman over 20 years of age should be considered cancerous until proven otherwise. These lumps in the breast should be removed and examined microscopically. Fifty per cent of the cases with bleeding from the nipple are due to cancer of the ducts. Transillumination and x-ray films will aid in locating lesions of the breast which should be biopsied. Postoperative x-ray treatments have greatly increased the percentage of cures in cancer of the breast.

Urinary Tract

The presence of blood in the urine indicates that careful cystoscopic examination and also

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pyelograms should be made. All papillary tumors are potentially malignant. They should be destroyed by fulguration and the patient given deep therapy x-ray treatments to prevent their recurrence.

Rectum

Remove polypoid tumors. If there is bleeding, see that the patient is thoroughly examined with the sigmoidoscope. Do not assume that bleeding from the rectum is due to piles.

Uterus

A watery discharge from the vagina which soon develops an odor and a pinkish color, especially after intercourse, is the earliest symptom of cancer of the uterus. Bleeding between the menstrual periods or after the menopause appears later. These symptoms indicate bimanual, direct examination of the vagina and cervix with the speculum and dilatation and curettment of the uterus. If the cervix is eroded, a section should be removed. The scrapings and tissue should be examined microscopically by a competent pathologist. Many women have died from cancer of the cervix because they failed to have an examination, assuming that the bleeding was due to the change of life. Repair of the lacerations of the cervix following childbirth will aid in the prevention of cancer.

Biopsy

The response to radiation is a fairly accurate index as to whether the tumor is malignant. Highly malignant tumors, as a rule, disappear rapidly. However, a biopsy should be done in every case. Fearing operation, many patients delay seeing a physician until it is too late. If the tumor is on the surface, even these patients do not usually object to biopsy if you tell them that you wish to shave off a piece of tissue with a safety razor blade.

Conclusions

Any fissure, erosion, sore, ulceration or lump in any part of the body that persists longer than two months should be excised and examined microscopically. If malignancy is present, x-ray and radium treatments should also be given. A positive Wassermann does not mean that the lesion is syphilitic. It is unwise to tell a patient that these early lesions mean nothing. A delay of several months many times results in a fatal outcome. Periodic health examinations should reveal many precancerous conditions and early cancers. Prompt and efficient treatment of these lesions will do much to lower the ever increasing death rate from cancer.

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DISCUSSION

DR. HILLYER RUDISILL, JR., Charleston:

These are both extremely important and timely papers. We all realize that these meetings afford us an opportunity for both an increase in our scientific knowledge and for social enjoyment. If these papers are taken to heart and remembered, we shall all more than fulfill our duties of increasing our scientific knowledge and shall be able to enjoy the rest of the meeting with a perfectly clear conscience. We shall also be able to save the lives of many people.

There are a few things I should like to mention about Dr. Sheridan's paper, since I was scheduled to discuss that. The first thing I wish to speak about is malignancies of the skin. Dr. Sheridan mentioned exposure to wind, sunlight, etc. Here in this section of the country we have what is called sea-island skin. A person who has lived out-of-doors all his life has a dry skin and has not one skin cancer but many. People should be cautioned against undue exposure of the skin to sun and wind. This fad of getting tanned, so popular among young people, will wind up with skin cancer.

As to cancer of the mouth, Dr. Bloodgood has made a great point of keeping the mouth clean. It is apparently true that if the mouth is kept clean and the teeth kept in good condition there will be very little mouth cancer.

In the removal of warts and moles, I do not think electrocoagulation or electrosurgery should be used, nor x-ray. I think all should be widely excised.

In the last few years, malignancies of the bladder have been arrested or apparently cured by direct radium implants, implanted directly through suprapubic incision into the bladder.

I enjoyed Dr. Baxter's paper, also. I think the most important point, from anybody's standpoint, is the point of prophylaxis. While cancer of the cervix is a very satisfactory type of malignancy to treat with radium, it would be a lot more satisfactory if we did not have to treat it at all; and it can be prevented by cleaning up these lacerations, endocervical lesions, etc.

DR. KENNETH M. LYNCH, Charleston:

I am sorry I did not have the opportunity of hearing Dr. Sheridan's paper. This is a subject very close to my heart in everyday work. Although I did not hear his paper and have no knowledge of what he had to say about precancerous lesions, I do want to speak of the sense of that term, for I find it commonly misunderstood. When a condition is called a precancerous lesion the idea is common that that necessarily results in the production of a carcinoma. It has no such meaning. It merely means that there are certain changes taking place in the tissues which are commonly seen previous to the development, or which result in the development, of cancer. It does not mean that there is cancer. If it is strictly true that there is a precancerous state which always leads to the production of cancer, we are unable to recognize it. It merely means that there are certain changes in the tissues, a state of chronic irritation, which may result in the development of cancer.

There are a few points I wish to emphasize in Dr. Baxter's paper. The first is his description of the use of Lugol's solution in determining absence of glycogen and consequent loss of staining properties. That is all that the Lugol's solution is good for. Don't have in mind that the application of Lugol's solution is going to make a diagnosis or eliminate a diagnosis of cancer of the cervix. All it does is show loss of surface epithelium, or not. That is present in cancer but more commonly present in other conditions than cancer, so it is not a diagnostic sign of cancer of the cervix.

I find it also a matter of some concern as to whether sections of tissue should be removed for microscopical examination and also as to the character of examinations to which they should be submitted. Carcinoma of the cervix is a preventable and a curable disease, as Dr. Baxter and Dr. Rudisill emphasized. It can be prevented by preventing the chronic infection of the cervix which produces it, and I want you to think more about chronic infection of the cervix than about injury in childbirth. It is not the injury which causes carcinoma but the chronic irritation following. Often cancers of the cervix can be cured in the early stages. In order to cure them, we must know whether they are present, or not. I have no fear about cutting into carcinoma of the cervix for the purpose of diagnosis. I am lukewarm about the matter of frozen sections at operation. A frozen section at operation is a matter of some stress and hurry. The section may not be taken so that it will show the proper field. A more deliberate study, which may occupy the period of a couple of days, will do no harm to the patient and may be a measure of assurance as to the outcome of the diagnosis. (I am, of course, speaking only of carcinoma of the cervix, at the moment. With all carcinoma, to deviate from the particular point, I am not fearful of taking sections for diagnosis; and I consider that, in the stage in which carcinoma can be cured, it is the only means of making a diagnosis. It has been shown that, in the short time necessary for making a proper diagnosis, there is no danger to the patient entailed in cutting into the lesion.

DR. J. R. ALLISON, Columbia:

The subject of cancer and its treatment is usually thoroughly discussed at most medical meetings. The two most important points of the subject are well discussed in these two papers; namely, early diagnosis and early treatment. There is nothing particularly new in the treatment of cancer. Methods have been refined, but adequate treatment still depends on early diagnosis and early treatment. The question of precancerous lesions has been discussed. This is a term applied to certain skin conditions that experience has taught us often become cancers after years of gradual change in characteristics. There is a growing tendency at the present time to believe that such lesions have always been cancers, but in a latent stage. Ordinary Basal-Cell skin cancers or Epitheliomas have been shown to have Prickle-Cell structures in ten per cent of the cases. It is impossible, therefore in a consideration of skin lesions to be able to make a definite diagnosis from clinical appearances of the lesions. For instance, in Doctor Sheridan's paper, he spoke of treatment of Keratosis in a general way. There are many types of Keratosis, many of which require different lines of treatment depending upon the type.

Biopsy in skin lesions is very useful in certain cases. The ideal time to remove cancers and precancerous lesions is often at a stage where the lesion is so small that a biopsy is not practicable. This is the ideal, but where the lesion is large, a biopsy should be made. For example, a Keratosis on the lower lip should not be allowed to grow large enough to make a biopsy practicable.

DR. WILLIAM WESTON, Columbia:

There have been some observations made which might throw some light on the etiology of this very interesting study. Doughty in his investigations of the diets of the tribes of Arabia observed that in certain tribes neither cancer nor diseases of the eye existed. Later Sir Arbuthnot Lane called our attention to the fact that there is no cancer among the inhabitants around the Equator, and attributed this condition to the fact that the people eat natural foods. More recently Dr. McClendon was sent by the Rockefeller Institute to Japan, where he stayed a year investigating the diets of the Japanese people. He remarked in his report that there is no radium in Japan, from which we infer that cancer is not a problem in that country. We also note from his report that there is only one case of goiter in a million of population.

Dr. Beale's studies impress me as most interesting; and if subsequent investigations sustain his findings, he will have made a great contribution towards the solution of this problem. If I may I would like to

read the report of one case here. With reference to carcinoma of the epithelium, etc., Dr. Beal of Massachusetts has conducted a very interesting study with the use of insulin. "Following the leg ulcer I saw a huge cancer of the chest, both breasts, both axillae, involving the left arm in marked edema, and with two huge necrotic areas. This patient had been seen at one of the best clinics of the country and a fatal prognosis given, and no recommendation except the administration of narcotics to let her die comfortably. But the similiarity of the two ulcerated areas in the carcinoma to the great leg ulcer I had recently seen recover, prompted me to use insulin in this case. Five units was given each day for two weeks; at the end of which time both necrotic areas were healed over and were dry; whereas, they had been moist, oozing serum. The whole growth was shrunken one half. Edema of the left arm was gone in less than three days."

DR. FLOYD D. ROGERS, Columbia:

I found out that Charleston is on time, this morning. I depended on your being a little bit late with this program and was surprised to find that you are on time; so I was not here to open the discussion on Dr. Baxter's paper.

As to the precancerous skin lesion, you have heard that we must make a definite diagnosis. Probably a biopsy might be good. Dr. Allison says not. There is a pretty good rule that the average practitioner can follow. If you have any small, discrete, scaling lesion on the skin that does not respond to the application of grease and to cleanliness, if it does not respond within three weeks, it has to be helped. Now, you may have a keratotic lesion that stays for years and nothing happens, and one morning the patient wakes up and the lesion has begun to grow and promptly grows into a definite carcinoma or epithelioma, or what not. So a good rule for the average practitioner to follow is that if you have any small, discrete skin lesion that has been scaling off, that does not get well under the application of soap and water and vaselin (or any other grease you might want to use), it has to be helped. When it comes to helping it, you can do it in any of several ways. You can excise the area, and the patient will be well. You can dessicate the area, and the patient will be well. Or you can use x-ray or radium. (I have reversed these in the order of their importance.) The surgical removal of a small skin lesion leaves a considerable scar—much more scar than dissection or x-ray or radium.

Any lesion on the lower lip, no matter how mild it might be, should not be observed over two weeks before something definite and drastic is done. The removal of a section from the lower lip for microscopic study should only be done if you remove sufficient to cure the lesion. Then the pathologist can study it at his leisure, and the man can be told that he had a carcinoma of the lip or an epithelioma of the lip, or whatever you might want to term it. Then the patient should be observed over a long period of time for enlarged glands of the neck. If these appear, then if a piece is removed and it is determined that it is malignant, the man should have a wide dissection of the glands of the neck.

Often a patient will come in with a full-blown epithelioma and will tell this story: "You see this thing on my cheek? I have had that thing for three years, and Dr. John Doe told me never to bother it until it bothered me. It does not bother me now; I do not have a bit of pain, but about two weeks ago it bled right badly." That is a mistake we of the medical profession make; we tell people not to bother things until they bother them; and that is certainly a mistake with precancerous lesions. Now, they are not hard to handle; almost anybody can handle them; and we certainly ought to recognize them.

As to carcinoma of the cervix, I have been treating carcinoma of the cervix with radium now since 1919; and it is absolutely appalling to me to see the number of patients that are not only beyond surgery but beyond any help whatever. The patients will tell you they consulted a physician two years ago. About what? Because they were bleeding between menstrual periods or bleeding when past the menopause. What did the doctor say? That he wanted to give them some treatment, for which they would have to come to his office three times a week. What is the treatment? The treatment is some sort of injection. You go back to it, and you find that that patient has not had her cervix looked at. And the visualization of the cervix is an extremely important procedure. (Time called.)

DR. ROBERT B. TAFT, Charleston:

I have a set of slides that may interest you. These are not my own slides; I copied them a number of years ago from the Journal of Gynecology and Obstetrics. I am not arrogant enough to believe that all cases of carcinoma of the cervix respond as quickly as this, but a great many of them do.

DR. SHERIDAN, Closing the discussion on his part:

The main thing about the whole business is to see the patient early. If the patients do not know what the symptoms indicate, they will not present themselves for examination. I think it is a subject for education—not only the medical profession but the laity should be educated to what these symptoms mean. Most lay people maintain that because we have not found the cause of cancer we can not do anything for it; they maintain a hopeless attitude. The American Society for the Control of Cancer has done a great deal of work in cities. After a campaign in Baltimore, Dr. Bloodgood said that, instead of most of the cases presenting themselves for examination being advanced cancer of the breast, most of them were non-malignant. These people had been educated on the subject.

The most important thing, after getting the patients, is to examine them thoroughly. As Dr. Rogers

said, many patients are not examined. Patients with cancer of the rectum are treated for hemorrhoids or for something else and not examined. I saw one patient who had been in a hospital three months with a fractured hip. She did not have a bloody discharge but did have a serous discharge, which later developed a foul odor. She had had no examination. Of course, it is not handy to examine a patient with a broken hip, but it can be done, and in this case it might have saved her life.

The term "precancerous" is of course not a scientific term, but it is one that is in general use. As to keratoses, there are different types. For keratoses on an oily skin, use plenty of soap and water; on a dry skin, use vaseline. The treatment for either type is about the same. If you get a response to irradiation, you know that malignancy is already present; if you do not get a response, you know it is a simple piling up of epithelial cells, which can readily be destroyed with the electric needle.

It is a nice thing, of course, to get a biopsy in these precancerous lesions of the skin, but it is not always practicable.

If a lesion on the lip is large, I think it is a good thing to take off only a small layer. If it is small, remove the whole lesion. If you have a lesion the size of a walnut, it is not necessary to remove the whole lesion in order to obtain tissue for a biopsy.

DR. BAXTER, Closing the discussion on his part:

I want to thank Dr. Lynch, particularly, for his discussion of this paper of mine.

The conditions we do not know about we never see or find. It sounds foolish to talk to intelligent people and say that if we do not look for a condition we do not find it, but that seems to be the fundamental trouble with the early diagnosis of cancer.

I think the point has been brought out this morning that cancer can be cured and is cured. Cancer of the cervix, as Dr. Rudisill's display in the lobby shows, can be cured in seventy-five per cent of the cases if found early. Of course, if we do not find them they can not be cured; they go on into the incurable stage.

The point Dr. Lynch brought out about the Schiller test, or the iodin test, I think might be expressed a little differently. He said the only value of the test is in determining the area for biopsy. I think a negative test is very valuable. If the whole vaginal or cervical epithelium stains a mahogany brown, then certainly cancer or the other diseases which destroy the epithelium are not present. The value of the Schiller test is that it does indicate some area or the best area, to take the specimen. Another thing; if you do the Schiller test you are going to look at the cervix; you have to do it in order to make the test; and if you do that you are going to find some early cases of cancer and save some lives.

NERVOUS AND MENTAL DISEASES

E. L. HORGER, M.D., STATE HOSPITAL, COLUMBIA, S. C.

ALCOHOL—MENTAL DISORDERS

The effect of alcohol upon the nervous system is, from the beginning, that of a depressant. The stimulating or exhilarating effect produced by it when it is first used is brought about by the phenomena of paralysis; that is, in the early stages of its use the higher psychic centers are affected, which are largely inhibitive. Later the lower centers of the brain become paralyzed and if sufficient amount of alcohol be used, coma may result.

Alcohol acts as an etiological factor in bringing about various types of mental disorders. According to the classification of mental diseases there is a definite group spoken of as the alcoholic psychoses, which are delirium tremens, acute hallucinosis, chronic hallucinosis, Korsakow's psychosis, paranoid states, etc. In speaking of alcoholic psychoses one must be careful not to include drunkenness in its milder forms, nor other types of mental disease which have alcoholism associated with them. It is very difficult to state how much alcohol or for how long a period its use is necessary to bring about a psychosis. It is recognized that certain individuals are predisposed to its effects. Especially is this true of those with an unstable mental make up.

In regard to statistics concerning institutions caring for the mentally sick, it is claimed that 12 per cent of the patients in these hospitals are there because of the effect of alcohol, which, directly or indirectly, has brought about their psychoses. Comparative figures according to the United States census bureau show that in 1910 alcoholic psychoses constituted 10 per cent of the total first admissions to institutions; in 1922, 3.7 per cent; and in 1930, 4.2 per cent. These percentages do not include the alcoholics without psychoses nor the

other psychoses that had alcoholism associated with them. In our own state institution, for the past five years, alcohol was the factor in bringing about the admission of 47 in 1929, 44 in 1930, 39 in 1931, 77 in 1932, and 47 in 1933—the statistics for 1933 cover a period of nine months—making a total of 254. From a diagnostic standpoint, of this number, 73 were definitely psychotic.

As an etiological factor alcohol also plays a prominent part in epilepsy. According to Muskens, it may break down the inherent resistance of the individual and "precipitate a fit where the patient has a predisposition to epilepsy. Alcohol used to excess . . . . may induce such constitutional changes that epilepsy may result apart from predisposing causes." "Alcoholism in parents or grand-parents is a definite predisposing factor." Several cases are noted in which the causative factor of epilepsy in children was positively known to be alcoholic debauchery during conception. Even a small quantity of alcohol taken by a mother will sometimes cause her breast-fed child to develop fits, while the use of alcohol by a chronic epileptic will almost certainly produce fits.

Treadgold in his treatise on Mental Deficiency discusses at some length the effect of alcohol in producing amentia. He says that a pronounced family history of alcoholism "was present in no less than 46.5 per cent of my cases. It is to be remarked, however, that in five-sixths of these there was a definite neuropathic predisposition also, whilst in most of the remainder there was a history of other morbid influences." The great discrepancy in figures compiled by others studying aments "together with the fact that a history of alcoholism is unusually accompanied by a definite history of insanity, epilepsy, or other neuropathic conditions, suggests that its action is more often contributory than directly causal." The conclusion of Dr. Wiglesworth is "that alcoholism in the progenitors is a fruitful cause of idiocy, mental defectives, insanity, and other nervous diseases in the off spring."

After consideration of the part played by alcohol it can easily be seen that mental disorders would be greatly reduced by abstinence. Because of the social conditions under which people live and the economic distress of the times, the use of alcohol will continue; therefore the best that can be done is to endeavor to improve the environment, to instruct the people as to the affects, and to bring moderation in its use. It is very seldom if ever that a person normal in every way will drink a sufficient amount of alcohol to bring about a psychosis. It is usually the unstable, the nervy person, the individual with some peculiarity in his make-up that becomes addicted to the use of alcohol.

Members of the Association contemplating reading papers before the State Association at Florence, April 23, 24, 25, should send in their titles at once to the State Secretary in order that the State Committee may give due consideration to them.

The annual meeting of the Marlboro County Medical Society was held at Bennettsville on the evening of January 11. The attendance was good and the program as usual of a high order. This is one of the outstanding meetings of the year in medical circles in South Carolina.

Dr. Walter L. Bierring, President of the American Medical Association, will visit Charleston on February ninth and will address the Medical Society there at that time.

The Spartanburg County Medical Society will hold the first meeting of the year on Monday evening January 28. Dr. Oscar Wilson is the new President and Dr. D. L. Smith, Jr., the new Secretary.

Dr. O. B. Mayer of Columbia is the new President of the Columbia Medical Society. Dr. Ben Rubinowitz continues as Secretary and Dr. Tom Dotterer as Treasurer.

Dr. B. C. Bishop is the new President of the Greenville County Medical Society, Dr. William McNeil Carpenter holding over as Secretary and Dr. J. W. Jervey, Jr., continuing as Treasurer. This Society held a meeting and banquet in January in honor of a distinguished Orthopedic Surgeon of Boston.

The South Carolina Society of Ophthalmology and Otolaryngology will meet at The Columbia Hotel February 2, 1935. Among those who will appear on the program are the following: Dr. E. A. Hines of Seneca, Secretary S. C. Medical Association; Dr. Roderick McDonald, Dr. W. M. Carpenter, Dr. W. R. McWhorter. Dr. R. Lucas of Florence is the President and Dr. J. W. Jervey, Jr., of Greenville is the Secretary.

TRIBUTE TO DR. ROSSIE R. WALKER

(Continued from Page 3)

truthfully say that Dr. Walker laid down his life for his friends. He lived nobly, heroically and sacrificially in that he sacrificed his own welfare for the welfare of those whom he served.

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They walked and talked—a man and God;
A fragrance lingered where they trod,
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They talked and walked, down many years.
The way was called the vale of tears;
But he who walked with God received
Such comfort that he little grieved.

And walking thus, and talking so,
The man and God did onward go,
Until they reached a secret spot—
God took him, and the man was not.

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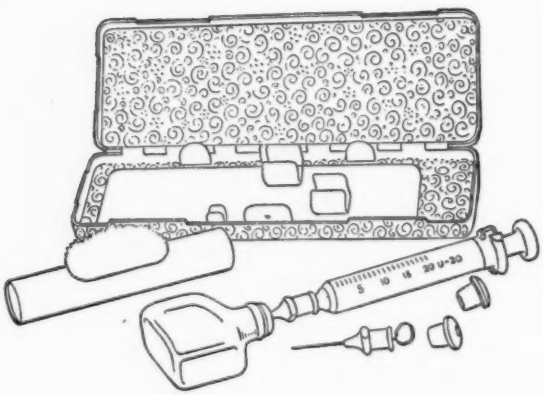

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EDITORIAL

EPOCH MEETING HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION CHICAGO

The delegates, Dr. J. H. Cannon of Charleston and Dr. E. A. Hines of Seneca have just returned from the special meeting of the House of Delegates of the A. M. A. and have brought with them the first draft of the resolutions adopted there. This is the second meeting in special session of the House of Delegates in the history of the A. M. A. The first one was held during the crisis of the World War and this call was deemed another crisis of transcendent importance. The report of the meeting published herewith was adopted by a unanimous vote of the 161 delegates present. A resolution was adopted also that this report be given the widest possible publicity. It is urged that every doctor in South Carolina read this report carefully and do everything in his power to see that every one who should know about it has the opportunity. The officers of the South Carolina Medical Association will of course speedily undertake to carry out the spirit of the House of Delegates of the American Medical Association in its special meeting to the letter.

REPORT OF THE REFERENCE COMMITTEE SPECIAL SESSION HOUSE OF DELEGATES

February 15 and 16, 1935

Your reference committee, believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress and inevitably lower the quality of medical service now available to the American people, condemns unreservedly all propaganda, legislation or political manipulation leading to these ends.

Your reference committee has given careful consideration to the record by the Board of Trustees of the previous actions of this House of Delegates concerning sickness insurance and

organized medical care and to the account of the measures taken by the Board of Trustees and the officials of the Association to present this point of view to the government and to the people.

The American Medical Association, embracing in its membership some 100,000 of the physicians of the United States, is by far the largest medical organization in this country. The House of Delegates would point out that the American Medical Association is the only medical organization open to all reputable physicians and established on truly democratic principles, and that this House of Delegates, as constituted, is the only body truly representative of the medical profession.

The House of Delegates commends the Board of Trustees and the officers of the Association for their efforts in presenting correctly, maintaining and promoting the policies and principles, heretofore established by this body.

The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care, and the provision of adequate medical service to all the people. These physicians are the only body in the United States qualified by experience and training to guide and suitably control plans for the provision of medical care. The fact that the quality of medical service to the people of the United States today is better than that of any other country in the world is evidence of the extent to which the American medical profession has fulfilled its obligations.

The House of Delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the Federal government, the governments of the individual states or by any individual industry, community or similar body. It reaffirms, also, its encouragement to local medical organizations to establish plans for the provision of adequate medical service for all of the people, adjusted to present economic conditions, by voluntary budgeting to meet the costs of illness.

The medical profession has given of its utmost to the American people, not only in this but in every previous emergency. It has never required compulsion but has always volunteered its services in anticipation of their need.

The Committee on Economic Security, appointed by the President of the United States, presented in a preliminary report to Congress on January 17 eleven principles which that Committee considered fundamental to a proposed plan of compulsory health insurance. The House of Delegates is glad to recognize that some of the fundamental considerations for an adequate, reliable and safe medical service established by the medical profession through years of experience in medical practice are found by the Committee to be essential to its own plans.

However, so many inconsistencies and incompatibilities are apparent in the report of the President's Committee on Economic Security thus far presented that many more facts and details are necessary for a proper consideration.

The House of Delegates recognizes the necessity under conditions of emergency for federal aid in meeting basic needs of the indigent; it deprecates, however, any provision whereby federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner Bill which place in the Children's Bureau of the Department of Labor the responsibility for the administration of funds for these purposes.

The House of Delegates condemns as pernicious that section of the Wagner Bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.

The so-called Epstein Bill, proposed by the American Association for Social Security now being promoted with propaganda in the individual states, is a vicious, deceptive, dangerous and demoralizing measure. An analysis of this proposed law has been published by the American Medical Association. It introduces such hazardous principles as multiple taxation, inordinate costs, extravagant admin-

istration and an inevitable trend toward social and financial bankruptcy.

The committee has studied this matter from a broad standpoint, considering many plans submitted by the Bureau of Medical Economics as well as those conveyed in resolutions from the floor of the House of Delegates. It reiterates the fact that there is no model plan which is a cure-all for the social ills any more than there is a panacea for the physical ills that affect mankind. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. Your Bureau of Medical Economics has studied these plans and is now ready and willing to advise medical societies in the creation and operation of such plans. The plans developed by the Bureau of Medical Economics will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. They must at the same time meet apparent economic factors and protect the public welfare by safeguarding to the medical profession the functions of control of medical standards and the continued advancement of medical educational requirements. They must not destroy that initiative which is vital to the highest type of medical service.

In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by this House of Delegates at the annual session in June 1934. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, installment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.

Your Reference Committee Suggests that the Board of Trustees request the Bureau of Medical Economics to study further the plans now existing and such as may develop, with special reference to the way in which they meet the needs of their communities, to the costs of operation, to the quality of service rendered, the effects of such service on the medical profession, the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June model skeleton plans adapted to the needs of populations of various types.

(Signed) Dr. Harry H. Wilson, Chairman, California
Dr. Warren F. Draper, Virginia.
Dr. E. F. Cody, Massachusetts.
Dr. E. H. Carey, Texas.
Dr. N. B. Van Etten, New York.
Dr. F. S. Crockett, Indiana.
Dr. W. F. Braasch, Minnesota.

DEATH OF DR. G. A. NEUFFER GREAT LOSS TO ORGANIZED MEDICINE

The death of Dr. Neuffer on January 2 removed from the rolls of the South Carolina Medical Association one of the most faithful and outstanding members. Dr. Neuffer early became imbued with the great benefits to be derived by the physician from his membership in the County and State Association. He accepted the duties therein and responded to every call to the limit of his ability to the day of his death. It was fitting that the many organizations medical, civic, and religious should honor such a leader in many ways. Early in his career Dr. Neuffer was elected to office in medical circles in South Carolina. He made a notable record as Councilor of the Third District and was a guiding spirit in the Council itself for a number of years, being accorded the Chairmanship at one time. Following this splendid service to organized medicine Dr. Neuffer was elected President of the Association and served in that office most acceptably. He did not stop there, however, for he was ever to be seen at nearly all the meetings of medical societies with which he was connected, and they were numerous within and without the State. Dr. Neuffer was a trustee of the Medical College of the State of South Carolina, and he delighted to serve his Alma Mater in this capacity. Dr. Neuffer was the friend of the young doctor, and at every medical meeting he was surrounded by them. He was keen of intellect and forward looking in medicine. He never seemed to grow old though he was beyond three score

and ten at his death. He will be greatly missed at our annual gatherings, particularly. He took an active part in the proceedings of the House of Delegates at the Charleston meeting in 1934, and was constantly in his seat at the meetings of the House as an Ex-President of the Association.

DEATH OF DR. FRANK DURHAM

The tragic death of Dr. Durham as a result of being struck down by an automobile while crossing a street brought keen sorrow to his numerous friends in all parts of the State. Dr. Durham was a pioneer in his specialty of Gastro-enterology and Proctology in South Carolina, or in the entire South for that matter. He served as Associate Editor of this Department in the Journal at one time. In fact he was the first Editor of this Department. Dr. Durham had served the State Medical Association in numerous capacities and always with fidelity. He had been President of the Columbia Medical Society. He was one of the most genial members of the Association and added a charm by his engaging personality to every circle in which he moved.

THE WORKMAN'S COMPENSATION BILL

A copy of the medical section of the Workman's Compensation Bill which has been introduced into the Legislature will be sent to the Secretaries of all County Societies for the purpose of information and action thereon by the Societies in the event that the bill as it now stands is not satisfactory. Communications about this or any other legislation should be sent to Dr. R. G. Doughty of Columbia, Chairman of the Committee on Legislation of the State Medical Association.

RIDGE MEDICAL SOCIETY

The Ridge Medical Society held its regular meeting Monday night, the seventeenth of December at the usual meeting place but with a smaller attendance than usual.

Our visitors were: Drs. J. E. Boone of the State Hospital, S. E. Harmon, President-Elect of our State Medical Society and E. W. Barron of Columbia.

Various matters pertaining to our local society were freely discussed by our visitors as well as our members.

Dr. W. P. Timmerman reported two unusual cases of fever, etc., with petechiae one of which died. This elicited considerable discussion but not unanimous opinions.

Dr. King reported three cases of black spider bites one in a white girl, another in a white boy and another in a negro boy.

All of them recovered.

Dr. Frontis reported great improvement in a patient which he exhibited at a previous meeting.

Dr. J. E. Boone read an interesting and instructive paper on diuretics and the treatment of urinary derangements.

Dr. S. E. Harmon made an instructive address on maternal morbidity and emphasized the necessity of proper and frequent examinations of the pregnant women.

Supper was served in The Rutland Hotel.

Owing to the recent death of Mrs. W. P. Timmerman's mother, Mrs. J. C. Swygert and of the impending death of her father Mr. J. C. Swygert of Peak who died the next day after our meeting, the Ladies Auxiliary met with Mrs. W. W. King where it was delightfully entertained.

W. W. King, M. D.,
Acting President.
W. P. Timmerman, M. D.,
Secretary.

MEETING COLUMBIA MEDICAL SOCIETY

At Crystal Room, Columbia Hotel, Monday, January 14, 1935, 8:30 P. M.

Regular Scientific Meeting

1. Thirty-five Years' Experience in Handling Injured People. By Dr. S. E. Harmon.
2. Fracture of the Hip Joint (Intra-capsular), A new method of skeletal fixation. By A. T. Moore.

O. B. Mayer, M. D., President.
Benj. Rubinowitz, M.D., Secretary.

PUBLISHER'S STATEMENT OF CIRCULATION

This is to certify that the average circulation per issue of The Journal of the South Carolina Medical Association for the six months period July 1st to and including December 31st, 1934, was as follows:

Copies sold—834.
Copies distributed free—101.
Total—935.

Signed E. A. Hines, M. D.

Subscribed to and sworn before me on this 11 day of Feb. 1935.

W. W. Burley.

(Notary Seal).

ORIGINAL ARTICLES

The Diagnostic Significance of The Visual Fields

By David St. Pierre Asbill, M.D., F.A.C.S., Columbia, S. C.

The field of vision for an eye is that portion of space which the fixed eye can see. The visual fields may be examined by the confrontation method, by the tangent screen, and by the perimeter.

For rough estimates the confrontation method is useful, but for most purposes a perimeter of tangent screen, or both, are essential. Of all perimeters, of which there are many, the new Ferree-Rand Perimeter with Tangent Screen, and accessories, is so far superior that it stands in a class by itself. The many exclusive advantages of this instrument cannot be enumerated here, but those interested are referred to the works of Ferree and Rand of Johns Hopkins, (See bibliography), and to 'Principles and Practice of Perimetry" by Dr. L. C. Peter, Professor of Ophthalmology in the Graduate School of the University of Pennsylvania.

The great importance of proper technique in taking visual fields is urgently stressed. The reason why proper technique is emphasized is obvious when one knows that diagnostically valuable early field changes are often slight and easily overlooked by careless and improper methods. Conversely, correctly taken visual fields often establish an early diagnosis and make early, effectual treatment and reliable prognosis possible.

The average normal fields for form and colors under seven (7) foot-candles illumination, and other standard conditions of the New Ferree-Rand Perimeter are given in a diagram.

The pathologic changes which may occur in the visual fields are of two kinds: (1) Scotomata, or areas in the field of diminution or complete loss of vision; (2) Changes in the shape and size of the form and color fields.

Some of the diseases and conditions in which the visual fields may be diagnostically significant are:

(I) Intraocular affections
- Choroiditis
- Day Blindness
- Night blindness
- Retinal changes in
  - Syphilis
  - Nephritis
  - Arteriosclerosis
  - Leukemia
  - Hodgkins Disease
  - Solar and Electric Retinitis
  - Retinitis Pigmentosa
  - Detachment of the Retina
  - Commotio Retinae
  - Traumatic Anesthesia of the Retina
  - Traumatic hole in the Macula
  - Rupture of the Choroid and Retina
  - Embolism and Thrombosis of the central artery of the Retina.
  - Thrombosis of Retinal Veins
  - Posthemorrhagic Amblyopia
  - Coloboma of the Retina and Choroid
  - Coloboma of the Optic Nerve
  - Coloboma of the Macula
  - Medulated Nerve Fibres
  - Wounds of the Choroid and Retina
  - Atrophy of the Retina
  - Papillitis
  - Papilledema or choked disc
  - Acute and Chronic Glaucoma

(II) Diseases of the Optic Nerve Proper
- Acute Retrobulbar Optic Neuritis
- Toxic Amblyopia
- Accessory Nasal Sinusitis
- Tumors of the Optic Nerve
- Wounds of the Optic Nerve
- Fracture of bone at the Optic Foramen
- Primary Optic Nerve Atrophy
  - Tabes Dorsalis

Read before the South Carolina Medical Association, Charleston, S. C., May 2, 1934.

Paresis
Multiple Sclerosis
Embolism and Thrombosis of the Central Retinal Artery
Secondary Optic Atrophy
Postneuritic or consecutive Optic Nerve Atrophy
Leber's Disease
Optic Nerve Atrophy following Retinal and Choroidal diseases

(III) Diseases Affecting the Optic Chiasm
Pituitary Tumors
Distended Third Ventricle from any cause
Tumors of the Craniopharyngeal Pouch
Cerebral and Cerebellar Tumors
Pressure of Internal Carotids in Arteriosclerosis and Brain Tumors
Basal Meningitis (especially Syphilitic)
Fracture of the skull
Pituitary Enlargement in Pregnancy
Nasopharyngeal Fibromas

(IV) Diseases of the Optic Tracts and Primary Optic Centers
Lateral Geniculate Body Pathology
Anterior Corpus Quadrigeminum Pathology
Tail of the Thalmus (Pulvinar) Pathology

(V) Diseases of the Optic Radiations and the Visual Cortex
Tumors, Abscesses, Haemorrhages, Cysts, Encephalitis, Aneurysms, Embolism and Thrombosis, of Cerebral Vessels

(VI) Functional Nervous Diseases
Hysteria
Neurasthenia
Scintillating Scotoma of Migraine
Amblyopia Ex Anopsia

Time limitation prevents consideration here of the field characteristics in the above named conditions which, however, should be kept in mind.

Generally speaking, the visual fields are valuable, in conjunction with other findings,

(1) In determining the side of a brain lesion. An interesting example of this is the Foster Kennedy Syndrome which is diagnostic of basal lesions of the frontal lobe: "A true retrobulbar neuritis with the formation of a central scotoma and primary optic atrophy on the side of the lesion, together with a concomitant papilledema in the opposite side."

(2) In determining the level of certain brain lesions. An example is the sparing of the macula characteristic of lesions above the primary optic centers and especially emphasized in disease of the visual cortex.

(3) Certain features of the visual fields are characteristic in determining the location and nature of eye, optic nerve, optic chiasm, optic tract, optic centers (primary), and cortical visual area lesions.

Some symptoms which indicate the taking of visual fields are:

(1) Generally speaking, the visual fields should be taken in all suspected instances of the previously named general, neurological, vascular, and ophthalmological conditions in which field studies may add to the certainty of, or positively establish the diagnosis.

(2) Persistent headache.

(3) Inability to read clearly nearby with properly correcting lenses when the refractive media of the eye are clear.

(4) Inability to see in certain directions. This may cause the patient to collide with objects which happen to lie in the defective portion of his field as he approaches them.

(5) Complete loss of vision in one eye; or, complete loss of vision in one eye and partial loss in the other; or, partial loss of vision in both eyes, not due entirely to a refractive error or to a local inflammatory or traumatic lesion anterior to the retina.

The interpretation of the visual fields for diagnostic purposes requires knowledge of the characteristics of the fields in the various conditions in which experience has proved their value. Essential, also, is familiarity with the anatomy, physiology, and pathology of the eye, optic nerve, optic chiasm, optic tracts, primary optic centers, optic radiations and visual cortex, as well as the structures in close or remote relation to all of the parts named, where the closely or remotely related structures, when diseased, are capable of causing directly or indirectly, changes in the visual pathways.

The practical diagnostic value of the visual

fields has long been recognized and utilized in leading medical centers. With refinement of instruments and technique involved the modern perimeter gives results far more valuable than was possible with the older equipment.

Like all diagnostic aids, the visual fields must be considered in conjunction with the clinical history, physical examination, laboratory findings, Roentgenological and other studies which may be necessary. It is often desirable to repeat field studies at intervals which will depend on circumstances. Early rational treatment depends, naturally, on early diagnosis. The visual fields have furnished early diagnostic and differential diagnostic data of importance in certain eye, brain, and general diseases. In this way visual field studies have often contributed to, and will continue to promote, the saving of sight and life.

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DISCUSSION

Pierre G. Jenkins, Charleston:

It is difficult to decide which phase of the subject of visual field changes should be brought out in any one particular in view of the wide scope of such a subject. Therefore, I will speak in rather general terms, reemphasizing the importance of diagnostic tests not only in ophthalmology but in general medicine.

As L. C. Peter has said, "By use of the ophthalmoscope the observer examines and studies directly and indirectly changes which may take place in the media, the retina choroid and sclera. Some of these changes are macroscopical and, therefore, open to direct in-

spection, while others are microscopical and are so minute as to escape observation by the use of the ophthalmoscope. It is in the latter group of cases that a study of the projected field of vision is of particular value. Furthermore, gross fundus and media changes observed by the ophthalmoscope are confirmed and amplified by a visual field test. In a study of the disease of the optic nerve only gross changes such as marked atrophy may be observed by the ophthalmoscope. However, when the visual pathway is diseased above the primary optic centers and the atrophy does not manifest itself in the nerve head, and in certain retrobulbar intoxications the ophthalmoscope is not of great aid, relatively speaking. It may be, therefore, that the visual field test is a valuable aid in the diagnosing of the diseases of the visual pathway posterior to the eyeball."

Testing field of vision is, therefore, indispensably associated with the subjective examination of the eye in the same way in which ophthalmoscopy is with the objective. Traquair has grouped the conditions in which testing the field of vision is of value as follows:

1. Those in which the media are clear and the fundus oculi normal.
2. Those in which ophthalmoscopic evidence is available but requires amplification and explanation.
3. Those in which the media are partly obscured making ophthalmoscopic examination impossible or inconclusive, and in which disease of the retina or nerve path is suspected or should be excluded.

Under the first group are especially those cases in connection with disturbances of the optic nerve or its pathways in the brain. A case illustrative of this was that of the boy seven years old, seen by me on April 2nd. with a history of having recovered from an attack of measles three weeks previously. Three days before I saw him, he had noticed that his vision was failing in both eyes. Examination revealed that he had a vision in the right eye 8/200 and in the left 20/200. There was no change seen in the fundus. A visual field test was done and it was found that the form fields in each eye were markedly reduced. There was an absolute central scotoma in each eye and all color fields were absent. It was felt that these findings indicated the presence of an affection of the visual pathways probably posterior to the chiasm of a toxic nature and probably related in some way to his recent acute infectious disease. This case points out the additional fact of the value of visual field testing not only as regards diagnosis but as regards prognosis.

This is borne out by the fact that subsequent field tests on this patient since putting him on appropriate treatment, have shown widening of the form fields but the visual acuity remains practically the same as on the first examination. Therefore, with the improvement in the field changes it is reasonable to feel that if this improvement continues in the course of time the visual acuity might also show improvement. The significance of not only the diagnostic and prognostic value of this procedure was foreseen by Berry who wrote in 1886, "It is evident that there are many points of diagnostic improvement to be gathered from an examination of the field. But there can be little doubt that in the thorough examination of the relative as well as absolute functional activity of all points of the retina we possess a means of immense value in the localization of intracranial disease. But it is not merely as a method of diagnosis that this examination deserves attention. In many cases it affords the most delicate means of ascertaining the course taken by a disease, especially when of intracranial origin."

I want to say that I thoroughly enjoyed Dr. Asbill's paper, and especially his slides, which showed a very remarkable variety of the different diseases in which we observe visual field changes.

Dr. E. W. Carpenter, Greenville:

Just a word of appreciation and commendation, for nothing more could be said which would add to this paper. It is compact and complete, and it shows a masterly understanding of the subject. I want to say that the average practicing ophthalmologist is not fitted, is not trained, to do the work the Doctor has set before you. The younger men who are coming up have been trained intensively in the appreciation and interpretation of the findings of these field defects. They are most valuable, and we can not get along without them. The general practitioner ought to be more or less familiar with them, and the committee on selection of papers is to be commended for putting this into the program. I wish to say that it takes infinite pains and patience and time to outline these fields, and to have them done carefully we ought to have trained technicians to outline these field defects and we should do the interpretation for the brain surgeon.

Dr. Asbill, closing the discussion:

I wish to thank the gentlemen for their discussion. I feel that their discussion has been very kind, and I feel also that their remarks have added very much to the value of my paper.

I thank you.

The Present Status of the Radiologist in Treatment of Breast Cancer

By J. P. Rousseau, M.D., Winston-Salem, N. C.

I wish to preface the following remarks in regard to radiation treatment of breast cancer with the statement that there is nothing new in this paper, nor do I claim any of the ideas contained in this paper to be original with me. What I have to say is obtained from review of American literature of articles published by our leading radiologists such as Pfahler, Portman, Quick, Lee, Evans, May, Bloodgood, Soiland, and others.

The brief time in preparing this paper has not permitted me to index the above references.

The treatment of cancer of the breast is a problem that concerns not only every practitioner of medicine, but every individual. Cancer stands second only to heart disease as a cause of death, and cancer of the breast occupies third place as to site of frequency. Any method having any merit in the treatment of this disease, should therefore be seriously considered when outlining a plan of treating breast cancer.

Today surgery and irradiation are our two main methods of treating cancer, and should only be used singly or conjointly after careful consultation with the family physician, surgeon, pathologist and radiologist, if the best interest of the patient is to be served.

Treatment of malignant tumors with roentgen and radium rays has reached the point today where it is possible to state with some assurance that certain tumors will respond favorably to the action of these agents and that others will not. For example, the basal cell and squamous cell epidermoids of the skin, lip, oral cavity, tonsil, larynx and uterus, the embryonic carcinomas of the testes, the hypernephromas and certain sarcomas are known to possess a relatively high degree of radiosensitivity. On the other hand, carcinomas of the oesophagus, stomach, colon and urinary bladder are known to be radio-resistent, and up until now but little has been accomplished by radiation treatment in this group of cases.

Breast carcinoma may be said to possess about the same degree of radio-sensitivity as do the squamous cell cancers. Some of the important factors known to determine the response of a malignant tumor to radiation are as follows: First; Radiosensitivity of the tumor cells, which may to a certain extent be determined by microscopic examination. We know today that the very cellular anaplastic undifferentiated and highly vascular tumors are the most malignant and the most radiosensitive, whereas the more differentiated desmoplastic tumors associated with the production of considerable fibrous tissue are less highly malignant and more radioresistant. This method of prediction of the sensitivity of a tumor is of value but subject to error. It is well known that sections taken from one part of a tumor may show the features of high malignancy and sensitivity, whereas sections taken of the same tumor from other parts will show just the opposite. For practical purposes it is essential that there be a difference in the tolerance of the cancer cells and the normal tissues harboring the tumor to permit the deliverance of a lethal dose of radiation to the cancer uniformly and at the same time preserve the integrity of the overlying skin and surrounding normal structures. Second: The accessibility of the tumor is another important factor in the treatment. It will determine the amount of radiation that may be delivered to the tumor. The proximity of a cancer to vital structures definitely limits the amount of radiation that may safely be given. Third: The extent of the disease is another important factor. Very large bulky carcinoma limits the ability of radiation to destroy the cancer cells in all its parts, because it is impossible to deliver the amount of radiation necessary without damage to healthy tissue and, too, it is often not possible to irradiate large tumors adequately and uniformly. Fourth: Certain tumors are so highly malignant that wide spread dissemination and distant metastasis have already doomed the patient before attention is called to the existence of the local lesion. The end results, therefore, in treating cancer of the breast are materially affected by the type of cancer cells, the rapidity of growth, the degree of malignancy, the radiosensitivity,

Read before the South Carolina Society of Roentgenologists, 1934.

the presence or absence of metastasis, the regions involved, the duration of the disease, the age of the patient, the presence or absence of complicating diseases and the general state of health of the afflicted patient.

Diagnosis of breast cancer: In regard to the diagnosis of cancer of the breast, I feel that the radiologist can be of distinct aid and should be accorded the distinction of being a medical consultant along with the family physician, the surgeon and the pathologist. Radiologists cannot hope to attain this prominent role, however, unless they are willing to keep pace with the newer methods of clinical diagnoses and learn the symptoms and signs of cancer of the breast, and at least know something of the gross and microscopic pathology of breast tumors. If they will do this the opinion of the radiologist will be respected and any suggestions he may offer in regard to treatment will carry more weight. We can always be of help in determining the extent of the disease, the presence or absence of metastasis to the chest or skeletal system by a careful radiographic study of the lungs and bones. These regions should always be explored with the x-ray before operation is done. The clinical diagnostic evidence of breast cancer may be absent, yet cancer may exist. On the other hand one or many of the following symptoms and signs of cancer of the breast may be present which are listed in their order of frequency and importance:

1. Single or multiple nodularity in the breast, usually not painful. The most frequent first symptoms, is more often a single painless lump, but may be mutiple and painful.
2. Loss of fat and increase of fibrous tissue which alters the normal contour of the breast. Interruption of the arc, of the circle of the breast.
3. Fixation and dimpling of the overlying skin, giving rise to the so-called pig skin or orange peel skin.
4. Retraction of the nipple.
5. Reddening of the skin over the nodule, or skin ulceration.
6. The nodule is hard, not fluctuant or elastic to touch.
7. Bloody discharge from the nipple. (50 percent being due to cancer.) (Adair)
8. Ulceration or eczematous areas in the nipple
9. Enlargement or shrinkage of the breast.
10. Swelling of the arm.
11. Lump in the neck or axilla.
12. Pain in the arm.
13. Cough.
14. Loss of weight.
15. Neuralgic pains in chest and neck.
16. Pain in the back.

The presence of one or a group of these signs and symptoms should cause a strong suspicion of cancer, or lead to the positive diagnosis of clinical cancer. If the clinical evidence above mentioned is insufficient on which to make a positive diagnosis, transillumination of the breast should be done and is of distinct value, though not conclusive. In doubtful cases, the intelligent use of the punch or aspiration biopsy may make the diagnosis. This proceedure, however, requires the opinion of an expert pathologist and close cooperation between the clinician and the pathologist. If, after these tests have been made, doubt still exists, exploratory operation, with immediate frozen sections should be done. If there is still doubt from study of the frozen sections, the lesion is more likely to be benign. The wound should be cauterized, the incision closed and roentgen therapy given during the interval necessary for the preparation and study of permanent paraffin sections. The radiologist should also be familiar with grouping and classification of breast cancer. The classification of Steinthall is the one generally accepted in American and European clinics, which is as follows: Group No. 1; Growth is confined to the breast with no clinical, microscopic or radiographic evidence of metastasis, and is definitely operable. Group 2: Cases of definite metastasis to the axilla, fixation to the pectoral muscles and showing involvement of the skin lymphatics, doubtfully operable. Group 3: Cases with or without axillary nodes, but with definite metastasis to distant parts of the body, as supraclavicular nodes, chest, mediastinum and bones; definitely inoperable. Group 4: Should include the postoperative, recurrent breast cancers which may in turn be divided into (A) cases of local recurrence only and operable and (B) cases, with or without local recurrences but with wide-

ly disseminated metastatic carcinoma, and inoperable. The first essential, therefore, in the treatment of cancer of the breast is the correct diagnosis and the proper evaluation of the above factors. The next essential is to determine and outline the best plan of treatment after consultation with the family physician, surgeon, pathologist and radiologist. In the early Steinthall group 1 and group 2, operable and doubtfully operable cancers of the breast, I am convinced that a thorough course of preoperative roentgen therapy should be given in every case. It is also important that this treatment be given with an exact technique and with as meticulous care as is any major operation. As radiologists, we are convinced of its value and know that it is possible to accomplish the following changes in the tumor: First; In the highly malignant radiosensitive cancers, the entire tumor along with its axillary involvement is often made to completely disappear. In such cases, where there is a rapid and marked response to radiation, indicating a high degree of malignancy and radiosensitivity, in which type surgery meets with most of its failures, I am of the opinion that such cases should not be subjected to operation at all, but that treatment be continued with radiation alone. Second: In the less sensitive group of breast cancer, preoperative radiation will destroy many of the more sensitive calls, devitalize the more resistent cells and at the same time exert a restraining influence on the tumor by an indirect action known to develop in normal tissue as a result of radiation. It has definitely been shown that such changes occur in radiated cancer of the breast examined microscopically at the time of the operation and by animal experimentation. The value of this precedure is furthermore demonstrated clinically by the fact that post operative recurrences and distant metastases are much less frequent and occur much later than in patients who have had no preoperative treatment. Statistics from leading American Radiologists such as Pfahler, Portman, Soiland, Christie, Quick, Lee, Evans, May and others, and from the clinics of Wintz and Keynes in Europe should be sufficient to convince the most skeptical of the value of preoperative treatments, yet today, many surgeons will object to preoperative radiation of breast cancer on the ground that the procedure causes an unnecessary delay in the operation, during which time they claim the cancer may continue to grow, extend locally or metastasize. These men are either unwilling to admit a value for a procedure which they may think a competitor of surgery, or else have been observing cases in which radiation treatment is incompletely and improperly given. We may today assume, and rightly so, that nothing but good can come of a carefully planned and properly executed preoperative course of roentgen therapy in primary operable cancer. The technique which I am at the present employing is 200 P. K. V., 50 centimeter distance, 1/2 mm. Copper and 1 A1. filters, 20 M. A., with an output of 40 r units per minute measured in air; multiple ports of entry are used, following as nearly as possible the tangential three field method of Holfielder and May. The total dose is between 2000 and 2500 r units 3-5 S.E.D. to each of the three fields given fractionally in doses of 200 r units daily, or every other day, over a period of three or four weeks time. The general condition of the patient is watched closely, special attention being paid to the nourishment, weight, blood picture and skin reactions. If untoward symptoms arise, the treatment may have to be interrupted or altered to suit the individual case. I believe that it is best to carry out the operation six weeks from date of last treatment. Ample time should be allowed to obtain all the possible benefits from the course of treatment, and I have seen regression of the tumor continue for a period of six to eight weeks. As to the postoperative radiation of breast cancer, which is the treatment most widely used, I feel that the benefits that accrue, are less than from preoperative treatments. It should be employed in all cases, and given with the same exactness and attention to detail as is the preoperative treatment. Its use is based on the assumption that if radium and roentgen rays have the ability to kill the more sensitive cancer calls, that they will also have the ability to prevent recurrences after operation, by devitalizing the viable tumor cells which might have survived the preoperative treatment or escaped the surgical excision. The best plan of this treatment is as follows:

Postoperative treatment should begin at the time of operation before the skin wound is clos-

ed, and consists of implantation of highly filtered radium element needles, using 1, 2 or 3 mg. of radium in platinum needles with filtration equivalent to 5/10 mm. platinum with 1.33 mg. radium per each running centimeter of needle length. These needles are placed as nearly as possible after the method of Keynes of the St. Barthelomew Hospital in London. The needle being placed obliquely in the first, second, third and fourth innerspaces parasternally, 1 centimeter apart beneath the clavicle and along the attachment of the pectoralis major muscles and left in place for seven to nine days. As soon as the patient is out of the hospital and the incision healed, a postoperative series of 200 K. V. roentgen therapy is again given externally, using the saturation method of Dr. Pfahler, or its modification, the Coutard technique.

I know of no better way at present to emphasize the value of radiation treatment than to quote from leading surgeons and radiologists in charge of our best clinics. While often misleading and confusing and at times even erroneous from one cause or another the following facts are well substaintiated by study of statistical reports: First; The primary operable breast cancers, group I, treated by radiation only because of refusal of the patient to have an operation or because of poor general condition and extreme age of the patient, 81 to 100 per cent five year recoveries have been obtained by Soiland, Pfahler, Keynes, Quick and May. In this same group of cases the best surgical reports show only an average of 70 per cent five year recoveries. Second: Most cancers of the breast have progressed beyond the group 1, or operable stage, when first seen and are doubtfully operable. In this group surgery alone shows only 24.5 per cent five year recoveries, while in a similar group treated by combined surgery and radiation there were 37 per cent five year recoveries. Dr. Pfahler in his large series of cases showed 46.5 per cent five year recoveries in these doubtfully operable cases, or a gain of 90 per cent in five year recoveries when radiation and surgery were combined. He also shows that in cases with no treatment at all 24 per cent will survive the three year period. If complete operation is done, 29 per cent live three years, and with combined surgery and radiation 66 per cent will live three years. From these facts it seems, therefore, that with skillful surgery combined with proper pre and postoperative radiation, the patient's chances are nearly doubled. This accumulated experience of expert radiologists certainly justifies the extension of the status of radiation treatment in breast cancer to include the routine pre and postoperative roentgen therapy of all cases. An outstanding fact is that 70 per cent of all breast cancers operated on without radiation treatment are dead at the end of five years. This fact is obtained from reports of the best surgical clinics in the world. In the face of such a gloomy picture from surgery it seems justifiable to press further the use of radiation treatment since its worth has already been proven and accepted, based on the results obtained in postoperative recurrent, metastatic and inoperable breast cancer.

Before closing, I wish to review briefly the salient features of radiation treatment in a large and important group of breast cancers including the primary, inoperable, the postoperative recurrent and metastatic cases. In this group radiation alone is of any value with the possible exception of the Blair Bell lead therapy, still in the experimental stage and of doubtful value. By proper radiation in these cases it is possible to cure a few of these otherwise hopeless patients, markedly prolong life in others and to palliate the distressing symptoms in all. Most of you, I am sure, have seen extensive primary inoperable cancer, local recurrent carcinomatous ulceration of the chest wall, skin pulmonary and bone metastases disappear and remain free of symptoms for months or years with proper radiation. In most of these cases it is not possible to effect a permanent-cure, but in the majority, I believe it is possible to effect a marked regression of the tumor, prolonged growth restraint and prolongation of life with freedom from symptoms. The following method is in my opinion the best plan of procedure in treating these cases. The primary inoperable cancers without distant metastasis but with extensive involvement of the breast, axillary and supraclavicular involvement, should be given a complete course of roentgen therapy using multiple ports, to cover adequately all the involved areas. Six to eight weeks following the roentgen treatments any

residual tumor left in the breast, should be implanted with highly filtered radium element needles after the method of Keynes in London. Following this, further external radiation to the axilla and neck will depend on the integrity of the skin, care being taken at all times to prevent late x-ray sequelae. Metastatic lesions in the bones and lungs are treated with external roentgen radiation alone, giving the maximum dose through as many cross fire fields as possible by the saturation method of Pfahler. In regard to the use of radium, I am convinced that its use in conjunction with external roentgen therapy is of marked value. It should be used in small quantities of highly filtered radium element needles and distributed uniformly throughout residual tumor masses in the breast or in the nodes. It is of more value locally because of its more intense local action on cancer cells and should be used for this purpose only. The roentgen rays should be used for their wider and deeper effects. Recent progress in the use of roentgen rays by higher voltage and heavier filtration may eventually supplant the use of radium, but until more definite reports are available I believe we should continue to use radium needles interstitially in the tumor for its more intense local action after preroentgen therapy is completed. An advantage of the radium element needles over the use of gold implants or radon seed, is that the radiation from these needles is of equal intensity throughout the time of radiation, whereas with the radon, the maximum dosage is obtained within the first few days, the intensity decreasing porportionately each day. The second advantage of the needles is that the radium salt is equally distributed throughout the length of the needle which is much longer than the small seed and, therefore, it is much easier to uniformly radiate a large tumor with the needles than with the small seed.

The Use of Some Common Drugs in Urology

By James E. Boone, M.D., Urologist, South Carolina State Hospital, Columbia, S. C.

In presenting this paper I am going to tell you nothing new or original but only try to refresh your memory as to the use of a few well known drugs, which I hope will be of interest and practical use to every physician.

Read before the Ridge Medical Society, Batesburg, December 17, 1934.

It would be impossible to discuss every drug that is used in connection with the G. U. tract, therefore, I am going to limit myself to a few of the main ones.

Urinary Antiseptics:

Urotropin (Formin). The ammonium salt of formaldehyd has but one proven physiological effect. It liberates formalin in acid solution, i. e. in the stomach and in the urine. As a result of the irritating properties of formalin the toxic effect is felt in the stomach, kidney and bladder. The desired therapeutic effect is antisepsis of the urine, and this will vary in proportion to the concentration of the formalin in the urine which in turn will depend upon the acidity and the dilution of the urine and the amount of drug administered.

The required theoretical concentration is 1 to 30,000. It is customary to give the drug in conjunction with sodium acid phosphate (gr. 7 1-2 to 30). Recently the efficiency of this acidifier has been denied and the present fashion is to administer ammonium chlorid in the same dose. Some believe it is better to give the acidifier before meals and the urotropin 2 hours after meals.

There are some conditions for which urotropin should not be given, and if administered, will considerably aggravate the disease, such as tuberculosis, elusive ulcer, urethritis, prostatitis.

The drug has but two uses (1) prophylaxis and cure of acute infections—(2) the control of chronic infections.

It is of use as a prophylactic to prevent the so called urethral chill following the passage of a sound or cystoscope. It has never been shown that its use before or after operations is justified.

To control beginning pyelitis it is practically specific. For a chronic pyelitis it has very little value, if any at all.

This is the ideal antiseptic for tabetic patients or any type of paralytic bladder in which a catheter is used constantly.

Irritation may be expected in any case where

the bladder is emptied frequently because of inflammatory conditions.

Intravenous urotropin has a definite place in medicine. In some cases the response has been beyond expectations, in others somewhat disappointing. However, the results obtained warrant its continued use. I believe it hastens the passing of ureteral stones. Recently I have had two cases of ureteral stones which remained stationary for over two weeks. After the administration of urotropin intravenously the stones were passed, one in twenty four hours, the other in fifty two hours. (Acidifiers were given by mouth.)

Hexylresorcinol:

Here we have an antiseptic working on a different principle, it does not require acidity but concentration of the urine, and part of its antiseptic effect is derived from its power to reduce the surface tension of the urine.

It was introduced with high hopes and vigorous claims of urinary antisepsis. These hopes have not been realized. In my hands it has been of very little value. Some authorities even consider it a dangerous drug to use at the time of operation because the restriction of fluid may threaten the patient's life. It is said to have its unique qualities. It is the one urinary antiseptic which attacks the urea splitting cocci.

After supra-pubic operations where there are encrusted ulcers or very foul urine it may be used locally in conjunction with mercurochrome with excellent results.

One must take into consideration not only the antiseptics but the *Sedatives*.

Quoting one author—"I feel confident that mercurochrome, pyridium, acriflavine and methylene—blue by mouth—have no value beyond the impression they make upon the patient's mind. If they did not color the patient's urine they would not color his thoughts."

If salol, the benzoates, the borates, etc., have any antiseptic value it is so slight as to be negligible.

Balsamics:

Unquestionably they do something to the urine which renders it relatively soothing—like caprokol they have little value if diluted. If the patient with an inflammed and irritated bladder has sound kidneys, many of the balsamics will soothe the irritation, thereby distinctly helping to control the infection whether it is due to gonoccus, tuberculosis or other bacteria. Every practitioner has his favorite balsamic preparations.

The pure oil in capsules is just as efficacious. The synthetic balsamics are not recommended. When giving sandlewood oil an over dose not only disturbs the digestion but will also occasion a severe backache (renal congestion). This should be kept in mind.

Alkalies:

Alkalies have long been employed to reduce the acidity of the urine. The aim is to keep the urine as nearly neutral as possible; an important point to remember is that excessive alkalinity is as objectionable as excessive acidity. The use of litmus paper will relieve any doubt about this.

Sodium bicarb or sodium citrate is as good as any alkali, and I do not believe can be improved upon.

Acidification:

Both alkalinization and acidification of the urine are employed for the mere purpose of changing the reaction of that fluid and rendering it a less happy medium for the growth of bacteria that are flourishing in it. The best means should be diet. It is claimed that meat, eggs and grain products are notable acidifiers, while other vegetables, notably roots, are all alkaliniers. The benzoates and sodium acid phosphate are used for this purpose.

The most efficacious drug is ammonium chlorid from 7 1-2 to 30 grains t. i. d.

Local Antiseptics:

I shall attempt a brief discussion of only those with which I am familiar.

Silver Nitrate: This is the most generally used antiseptic for applications to the kidney pelvis—up to 1 per cent; to the bladder—1 to 1000 and 1 to 20,000; to the post urethra—1 to 20,000 to 2 per cent. Urethroscopic applications 10 to 50 per cent. I have never used silver nitrate in the anterior urethra because leading authorities condemn its use there.

Its value is due rather more to its astringent effect than to its actual destruction of bacteria. It seems to heal a sore spot whether it be a granulation upon the skin or a pyelitis or a cystitis. To my mind silver nitrate is the best local antiseptic in use at the present time but it

must be handled with great care and precaution as some patients are very sensitive to this chemical.

For sexual stimulation nothing can equal silver nitrate applications or instillations in the posterior urethra.

Potassium Permanganate: 1 to 6,000 and 1 to 3,000. It is a mild astringent, slightly antiseptic. It is the first choice in the treatment of acute anterior urethritis. It controls acute manifestation nicely but does not shorten the duration of the disease. Some authorities seem to think it lengthens the course of a chronic post urethritis.

Boric Acid: The best way to use this chemical is to give the patient a pound of the crystals with the knowledge that no solution he can make from this will be so strong as to do him any harm and the good he will derive from its use about the same.

Protargol: 1-200 prophylactic 1-400 treatment. It is ideal for prophylactic against gonorrhea and in the repressive treatment of g. c. It is relatively non astringent, rather penetrating, has a high laboratory bactericidal property.

Albargin: Has the same properties as protargol; and is used in about half the strength. These two antiseptics are at times irritating to the mucosa.

Argyrol and Neo-Silvol (10 per cent): Both very mild, soothing and slightly antiseptic. An important point to remember is that distilled water should be used in the preparation of a solution of these drugs—and that a fresh solution should be made up every other day. If these solutions are allowed to stand any length of time an irritating substance is formed which some patients cannot tolerate. I have never seen a bad reaction from a freshly prepared solution.

Acriflavine: This dye is now made under the name of neutral acriflavine and is relatively free from the hydrochloric acid which caused strictures of the urethra without causing pain. The neutral acriflavine has a tendency to cause ulcers without exciting pain. For irrigating urethra 1-4000 is plenty strong, not over twice a day. In mild infections it is excellent; in severe infections it is of no great value. It is of value in washing out wounds in order to prevent infection from contents from the bladder or kidney. Remember to make the solution fresh every day.

Mercurochrome: Intravenously I have seldom used this. One leading urologist says "It has shot its bolt." The uncertainty of its action, the lack of any scientific foundation for its use and the deaths it has caused by acute mercurial poisoning, have condemned it. I do not agree with that statement but feel that great caution should be exercised. As a local urinary antiseptic it has great value. It is an admirable wound cleansing agent after urologic operation.

It is not useful in the treatment of gonorrhea and at times the irritation to some individuals is so excessive as to make the use of mercurochrome contra-indicated.

For bladder instillations begin with a few drops of a 1-200 solution which may be increased to a 2 per cent solution.

Oleo-Gomenol: This is the most soothing oil I have ever used in the bladder and urethra. Frequency and tenesmus caused by the passage of instruments or any inflammation about the trigone is almost instantly relieved by instilling from 2 to 10 c. c. There is nothing curative about this oil; it is purely symptomatic relief which is extremely effective.

Hydrochloric Acid in Treatment of Urologicat Conditions (Courtney W. Shopshire—Birmingham, Alabama.)

1-1500 solution, 10 c. c intravenously every day for one week or from one to three days according to the reaction of the patient. It will increase the red and white blood cells and hemoglobin. He has used it with startling results in the pre-operative preparation of trans urethral prostatic resection. There have been no primary nor delayed hemorrhages, nor shock, and no post operative infections. He has obtained satisfactory results in the treatment of acute and chronic gonorrhea, urethritis, prostatitis and seminal vesiculitis and rheumatism without any other treatment being used. It is necessary that general massage be carried out with this treatment. He states there is absolutely no reaction, danger or ill effects from the intravenous administration of hydrochloric acid. He has given several thousand injections without a single bad reaction or ill effect.

I am using this drug for the above conditions but have no opinion about it as I have not observed its use long enough.

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Journal Southwestern Branch Society of American Urology Association.

WOMAN'S AUXILIARY

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TWO NEW COUNTY AUXILIARIES FORMED

I am very happy to report 2 new county auxiliaries this year.

The last one formed was Florence County, where Dr. F. H. McLeod, Chairman of the Advisory Council of the Woman's Auxiliary, at the request of Mrs. C. P. Corn, State President, called the doctors' wives together for an organization. Twenty-two ladies met, and Mrs. O. T. Finklea of Florence was elected President and Mrs. Frank Davenport of Timmonsville, Secretary and Treasurer. They are already making plans for the Convention, April 24, when they will be hostesses for the State Auxiliary.

The combined counties of Colleton and Beaufort organized to form one auxiliary and at their January meeting had a large representation and elected the following officers:

President—Mrs. Carroll Brown, Jr., Walterboro, S. C.

Vice Pres.—Mrs. W. B. Ryan, Beaufort, S. C.

Treasurer—Mrs. W. A. Black.

Secretary—Mrs. W. A. Carrigan.

Mrs. C. P. Corn, President.

RIDGE MEDICAL SOCIETY

The Ridge Medical Society met the fifteenth of October, 7:30 P. M., with a fair attendance of members and three visitors, Drs. Waters and W. B. Timmerman of Johnston and Dr. T. H. Symmes of St. Matthews.

Dr. D. B. Frontis exhibited a case of fatty enlargement of thighs, buttocks and abdomen and reported another similar case.

This case elicited discussion from most of those present.

Dr. W. P. Timmerman reported a case of a young lady who had symptoms at first which simulated malaria, later typhoid and which ended fatally. This was ably discussed by Drs. Wm. Timmerman, W. W. King, Walker, Symmes and Frontis.

Dr. R. H. Timmerman read a paper on diuretics and blenorrhagics.

Dr. E. P. Taylor reported a case of fainting in which a diuretic instead of stimulant was given due to wrong label on bottle.

The result was excellent but his descriptions, etc., were amusing.

Dr. Symmes after expressing his pleasure at begin with us read an interesting paper on influenza and its causes, modes of infection, treatment, etc.

His address was discussed by Drs. Asbill, Ridgell, King and Wise and W. P. Timmerman.

Supper was served in The Rutland Hotel.

W. P. Timmerman, Sec'y.

PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT 279, JANUARY 11, 1935

Student Salley (presenting case record):

A Negro female, age 45 years, admitted Nov. 14, 1934, died Dec. 7th.

On 11-2-34 patient began to note difficulty in voiding, passing only a few drops of urine on straining. Lower abdomen became somewhat distended. No blood in urine, no pain on urination. Some numbness and heaviness of the left leg was noted on the same day, followed a few hours later by complete inability to move leg. On 11-10, the right leg began to get weak and on admission can only move the right leg "a very little." Patient has had some pain in her back for several years, especially worse when working. Pain in back dull and aching in character. Family history negative. Two children died a few days after birth, cause unknown. No living children. Review of the systems reveals only occasional constipation and nocturia. Menses regular but prolonged, associated with back pains. Diet adequate.

Physical: An emaciated negress, estimated weight 110 lbs. Temp. 99.6, Pulse 100, Resp. 22. Skin scaly about arms. Eyes, ears, nose negative. Tongue coated, teeth in fair condition. No palpable lymph glands. Chest: Apparently clear, altho adhesive strapping across back prevented careful examination of lung bases. Heart: Appears to be normal, possibly slight displacement to the right. Abdomen: tender to deep palpation over both kidneys. Mass felt in bladder region, no other masses palpated. Complete paralysis of left leg, partial of right, being able to move toes on right foot. "KJ elicited on left but very feeble. Babinski negative."

Lab.: Urine (11-15; 11-22) Cath., clear, acid, 1012-1014, alb. 2 plus, sugar and acetone 0, finely and coarsely gran. casts 2 plus, pus casts, pus 5-10 H.P.F., blood 0-5 per H.P.F. Blood (11-15; 11-22): Hb. 50 per cent D, -; RBC 2,280,000, -; WBC 9,450, 12,800; achromia 2-3 plus; polys. 74 per cent, 77 per cent; lymphs 20 per cent, 20 per cent; large monos 4 per cent, 2 per cent; eosinophiles 2 per cent, 0; basos 0, 1. Feces (11-25) negative. Blood Kolmer and Kline 4 plus. Spinal fluid (11-15), clear, yellowish, globulin 4 plus ("old blood?"), sugar 0, cells 35, lymphs 45 per cent, polys. 55 per cent. Blood Urea N (11-22) 13 mgs. Spinal Kolmer 4 plus.

Progress: Temp. irregularly elevated, usually between 100 and 102, almost continuous, following no characteristic pattern. Pulse 100-140, respirations 22-36, possibly getting slightly faster as death approached. 11-16—Jerky contractions of left leg noted. Mushroom catheter put in place. 11-21—A large dirty gangrenous sloughed area noted over coccyx, quite painful. 11-27—Slough over buttocks is steadily increasing in size. 11-27—Neurological Exam. (Dr. Chamberlain)—Partial paralysis of both legs, suspicious clonus, bilateral Babinski. "Sensation impaired and ? from level 9th dorsal down." 12-3—Patient complains of diarrhoea. Marked weakness developed, diarrhoea continued, patient died at 7:50 A. M. 12-7-34.

Dr. Chamberlain (conducting): Mr. Adams, will you give your analysis of this case?

Student Adams: It seems that these symptoms, appearing in the order given, involving only the lower part of the body, can be explained only by a lesion in the spinal cord, probably its dorsal portion. Such a lesion could be a myelitis, a hemorrhage into the cord, or some tumor compressing the cord from without. Hemorrhage into the cord would give more sudden symptoms than these, probably without the initial numbness, but a sudden falling. This is usually associated with trauma. As to tumor, it seems to me that she has too little pain in the area affected for this to explain the condition.

Dr. Chamberlain: By tumor, do you mean tumefaction or a neoplasm?

Student Adams: A neoplasm.

Dr. Chamberlain: Will you broaden out on your first suggestion, a myelitis?

Student Adams: A syphilitic myelitis would be the most likely, with a positive blood and spinal fluid Wassermann.

Dr. Chamberlain: Then you favor a luetic myelitis in your analysis? A diffuse or a localized process, pathologically speaking?

Student Adams: Probably localized.

Dr. Chamberlain: What is its nature—a meningomyelitis?

Student Adams: Yes, with some edema about.

Dr. Chamberlain: Mr. Assey, the abstract states that there was an irregular fever, and that the leucocyte count was elevated. Do you think a luetic myelitis can account for these?

Student Assey: I agree with the diagnosis of a transverse myelitis, but I think that an infection of the urinary tract probably accounts for the findings in question.

Dr. Chamberlain: Why the urinary tract?

Student Assey: She has urinary retention with incontinence, and a mushroom catheter was in place; in addition there is pus in the urine.

Dr. Chamberlain: Mr. Barr, what is the effect of a lesion of the dorsal portion of the cord on bladder function?

Student Barr: Doctor, before answering, may I ask you a question?

Dr. Chamberlain: Yes, if I may ask you another in return.

Student Barr: Was a colloidal gold determination done in this case? And what was the blood pressure?

Dr. Chamberlain: The blood pigment in the spinal fluid prevented the colloidal gold test. The blood pressure was 120-90.

Student Barr: And the spinal fluid pressure?

Dr. Lynch: How much confidence would you place in the estimated speed of flow of the spinal fluid, without manometric readings?

Student Barr: If active infection is present, the pressure is more apt to be increased.

Dr. Chamberlain: I would disagree there; the most virulent infections, with actual pus flowing out, drip very slowly.

Student Barr: Was a fundus examination done?

Dr. Chamberlain (reading): "Retinal arteries moderately sclerosed, but no retinitis, hemorrhages or choroiditis." No mention is made of the appearance of the discs. If elevation of the discs had been noted in this case, how would you have interpreted it?

Student Barr: That would suggest brain tumor.

Dr. Chamberlain: The localization of symptoms and paralyses points to the cord and not the brain, does it not? Now to come back, what effect would a lesion of the dorsal cord have on the bladder?

Student Barr: In tabes dorsalis, a disease of the cord, we frequently see bladder paralysis and urinary retention, but I cannot explain its exact physiology.

Dr. Chamberlain: Where is the bladder center in the cord located?

Student Barr: In the sacral region.

Dr. Chamberlain: A lesion in the cord above this would have what effect?

Student Barr: To cut off the voluntary control of the bladder.

Dr. Chamberlain: Then would the bladder function at first?

Student Barr: It would fail to function at first and retention would follow. Later this effect would be lost, and the center in the cord would automatically control the bladder emptying.

Dr. Chamberlain: Mr. Bowden, what do you think of the advisability of using a catheter in a case of this sort?

Student Bowden: I would not use one until absolutely necessary, as the training of the bladder to become automatic is important.

Dr. Chamberlain: Too, the catheter might carry infection up ward. It isn't always possible to establish an automatic bladder, but that is the desirable thing, since frequent catheterization is very apt to lead to infection.

Student: I don't quite get that. With retention won't there be damming back of infected bladder urine into the kidneys, with infection there?

Dr. Chamberlain: Myelitis causes a lack of control from above, with paralysis of the detrusor muscles of the bladder. What is usual-

ly done is to allow the bladder to fill, and if automatic control has not been established, to empty the bladder at regular intervals by the Crede method used in obstetrics, forcing the urine past the contracted sphincter. Mr. Cain, can you think of any other localized process in the cord which might cause such a syndrome as this?

Student Cain: Acute myelitis also occurs in association with foci of infection elsewhere in the body, but the spinal fluid should be more purulent.

Dr. Chamberlain: Mr. Fouche, how about Pott's Disease of the spine?

Student Fouche: I think that there would be more symptoms referring to the vertebra, and that there would be a suggestive history of tuberculosis, or some physical findings in the lungs. I would expect pain in the back, kyphosis, and stiffness of the back.

Dr. Chamberlain: That is true, but it is by no means impossible for such a picture as this to occur, without vertebral symptoms, and the onset being sudden, with symptoms of cord compression.

Student: Wouldn't the spinal fluid be different from this, more the type of fluid seen in tuberculous meningitis?

Dr. Lynch: Exactly such a picture as this could be seen in Pott's disease of the spine with extra-dural tuberculosis.

Dr. Chamberlain: That is my impression. The most serious omission in the handling of this case was the lack of an x-ray of the spine.

Dr. Johnson: I would like to comment on the color of the spinal fluid. Old blood could give such a pigmentation, and xanthochromia of the spinal fluid is very common in spinal cord tumors, where it is probably old blood pigment. Certain diets, rich in keratin, could so discolor the spinal fluid, as could jaundice.

Dr. Lynch: (Demonstrating autopsy specimens.) The lesion exhibited by this case, grossly, might well be either gumma or tuberculoma; at any rate a chronic localized inflammatory lesion, with tumefaction. The symptoms clinically could well go with either. If it were not for associated syphilitic lesions elsewhere in the body, and the lack of gross or microscopic evidence of tuberculosis, the differentiation between the two in this case would be very difficult. There was a gumma of the 10th thoracic vertebra, chiefly on the left side, with extension thru the adherent dura, and the formation of a mass, yellow and caseous, on the left side of the cord, with compression and displacement of the cord to the right. There is a well defined gumma of the liver, the other lesion which is circumstantial evidence that this lesion is also syphilitic.

The analysis of that part of the case related to the fever and more acute symptoms, i.e., the suggestion of an ascending infection of the urinary tract following urinary retention and an indwelling catheter, is quite reasonable. But you have overlooked the gangrenous bedsore on the sacrum. I believe that this was the immediately important factor resulting in the patient's death. With this as a focus of origin, there was a septic thrombosis of the smaller radicles of the portal vein, and an acute hepatitis. This bedsore was probably a trophic ulceration dependent upon the lesion in the spinal cord. She also had an ulcerative colitis. Her diarrhoea has not been discussed clinically. I do not know its exact relation to the rest of the picture here. But colitis is not an uncommon complication in septic states. The septic state here was due to the bedsore, and distant emboli with abscesses. A condition of pyemia, could be anticipated in such a case if it lived long enough. That was much more important here than the urinary tract infection. There was a low grade cystitis, but the kidneys showed no evidence of infection.

Microscopically (micro-projecting machine) we see here the eosinophilic, more or less homogeneous caseous material on one side of the cord, with considerable fibrous tissue about it and a marked infiltration by small round cells, many of which have a perivascular distribution. There is no evidence of tubercle formation. The cord, only part of which is shown, is compressed, and degeneration of most of the tracts can be seen.

The usage of the term "syphilitic myelitis" would suggest to me a diffuse inflammation of the cord. A localized syphilitic process, such as would give a sensory level, and localized paralyses, presupposes a gumma to me, and a proper understanding of the situation makes

that term advisable, indicating an actual inflammatory tumefaction.

For tuberculosis to cause such a picture, it would also have to be localized, a tuberculoma.

- - SOCIETY REPORTS - -

RESOLUTIONS ON DEATH OF DR. OSCAR LABORDE, COLUMBIA, S. C.

Oscar LaBorde, A. B., M. D., the second son of Dr. James Carroll LaBorde and Ada Kinsler LaBorde was born on his father's farm, May 30th, 1879, in upper township, Richland County, South Carolin. He grew into young manhood at the place of his birth, received his early school training in the same vicinity at Wayside school near Littleton, South Carolina. He entered the South Carolina College, now the University of South Carolina. While pursuing his college work, on account of the death of his father in 1898, he withdrew from college for a year and taught school at the place where he had received his early training. He worked there until he could see his way clear in reentering The South Carolina College which he did and graduated at that institution with A. B. degree in 1901.

After receiving the degree of Bachelor of Arts he entered The South Carolina Medical College at Charleston, South Carolina in 1901 for the study of medicine, attended that institution for four years and graduated in the year 1905 with first honor. He served one year Internship in Roper Hospital, Charleston, South Carolina, and in 1906 located in Columbia, South Carolina to practice his chosen profession, where he built up by hard work and close application to duty a large general practice which he enjoyed up to the time of his death, July 31, 1934.

On December 4, 1912 he was married to Miss Ellen Dunavant of Edgefield, South Carolina; to that union three children were born. Ellen LaBorde who is a Junior at The South Carolina University, Sophie LaBorde, and Oscar LaBorde, Jr.; both are students at the Columbia High School.

Dr. Oscar LaBorde was of a congenial nature, a good mixer, made friends where ever he went. He was an honest man, reliable, and trustworthy. A man who always stood for good principles. All who knew him could readily testify to his integrity and honesty of purpose.

The writer was intimately associated with Dr. Oscar LaBorde for many years and can testify to his trustworthiness and his honesty of purpose in all things.

He was of a retiring nature, never making himself conspicious but always outspoken on principles, he could not tolerate anything bordering onto pretense or show. Cared nothing for pomp and style but always rendered substantial honest service as a citizen and to his clientele, he was a good provider for his dependents, present and future.

He worked for all, rich, poor, white, and black alike; always performing his full duty. He was an ill man for four years prior to his death, no one knew that better than he, though he continued to carry on his work, his general practice, he went

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around doing good up to the time of his death, he administered to his patients in his office the day before he died, he really died in harness. He loved his work, he enjoyed life to the superlative degree. Modest, reserved, mild in manner, on fence straddler, nothing hypocritical in his make-up. He died as he lived, having faith in his Creator.

A mighty hand from an exhaustless urn
Pours forth the never ending flood of years
Among the nations
Its rushing waves bear all before them
On its formost edge
And there alone is life.

He drained that flowing cup of life forever at the brim
It filled his soul with that elixir of Joy—The incomparable
Joy of living that made his native atmosphere.

Resolved:

First—That in the death of Dr. Oscar LaBorde, The Medical Profession has lost a successful, honest general practitioner of medicine.

Second—That the public has lost an efficient, honest Doctor.

Third—That his patients, rich, poor, white, and black have lost a true friend, an honest competent medical adviser.

Fourth—That this biography and resolutions be given a full page in our minute book. That they be published in the two daily papers of the City. And that a copy be sent to his family.

Respectfully submitted,
S. E. Harmon, chairman.
T. D. Dotterer.
C. K. Lindler.

Adopted by Columbia Medical Society with a rising vote.

Benj. Rubinowitz, Secretary.

COLUMBIA MEDICAL SOCIETY

The regular meeting of the Columbia Medical Society was held on December 10, 1934 at 8:30 P. M., Dr. E. L. Horger presiding.

Minutes of the previous meeting were read and adopted.

Dr. John H. Young, applicant for membership was reelected by a unanimous vote.

The election of officers was next in order, Dr. Davis Asbill and Dr. W. A. Hart acted as tellers. Dr. O. B. Mayer was elected President for the year 1935. Dr. E. L. Horger the outgoing President made a short talk of appreciation for the splendid cooperation of the society during the past year. Dr. O. B. Mayer was escorted to the Chair by Dr. Allison and Dr. Hopkins, and responded with a short talk. Dr. Geo. Benet was elected Vice President, Dr. Benj. Rubinowitz was reelected Secretary. Dr. T. D. Dotterer was reelected Treasurer.

Dr. Theo. DuBose, Jr. and Dr. E. W. Barron were elected to serve on the House of Delegates for a period of two years. Dr. F. M. Routh was elected as a delegate for one year to fill the unexpired term of Dr. O. B. Mayer, who by election to the Presidency became automatically a delegate. The hold over delegates are Dr. C. K. Lindler and Dr. I. Izard Josey.

Dr. H. H. Plowden was elected to serve on the Board of Censors for 3 years. The hold overs on the Board are Dr. Rodger Doughty and Dr. Manly Hutchinson.

Dr. O. B. Mayer appointed the Auditing Committee consisting of Dr. J. R. Allison, Chairman; Dr. Hugh Wyman, and Dr. Coyt Ham. Committee on Public Health and Legislation, Dr. J. B. Setzler, Chairman, Dr. D. F. Adcock, Dr. T. J. Hopkins, Dr. F. E. Zemp and Dr. Gorden Stuart.

Dr. W. R. Barron announced that during the latter part of January Dr. Howard Kelley of Baltimore will be in Columbia for a short stay and moved that during his visit a special meeting be held if necessary in order to have Dr. Kelley address the society. That the President write Dr. Kelley extending this invitation. Motion was second and passed.

Society adjourned at 10:15 P. M.

Benj. Rubinowitz, Secretary.

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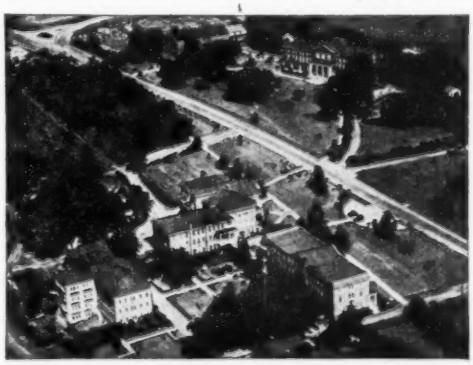

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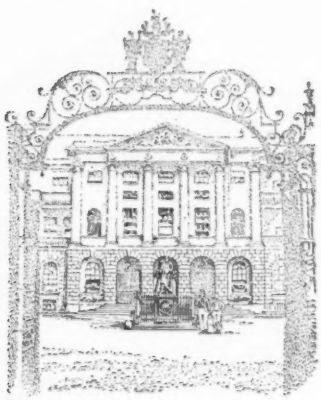

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EDITORIAL

SPECIAL SESSION OF HOUSE OF DELEGATES

President William Egleston called the House of Delegates of the South Carolina Medical Association to meet at Columbia, March 5, 1935, to act on the report of the delegates to a special session of the House of Delegates of the American Medical Association held at Chicago, February 15, 16 to consider health insurance and other economic problems. The meeting at Columbia was largely attended and showed a marked interest in the problems confronting the medical profession from the economic standpoint at the present time. Following the report of the delegates to the American Medical Association a committee was appointed with power to act in cooperation with the American Medical Association and committees from other state associations in the study of economic problems. This committee is as follows:

Dr. R. S. Cathcart, Charleston, S. C.
Dr. J. W. Jervey, Greenville, S. C.
Dr. T. A. Pitts, Columbia, S. C.
Dr. C. R May, Bennettsville, S. C.
Dr. W. R. Wallace, Chester, S. C.

Our House of Delegates indorsed unanimously the report of the Reference Committee of the A. M. A. at its meeting in Chicago as published in the last issue of the Journal.

It may not be out of place to repeat that this report voiced the opposition of the the A. M. A. to all forms of compulsory sickness insurance, whether administered by the Federal Government, individual states, individual industries, community or similar bodies. The A. M. A. report authorized continued study of plans whereby individual communities may promote a satisfactory plan for adequate medical service to all the people.

It may be possible that the menace of compulsory sickness insurance will not have to be faced in the year 1935 but it is certain that as a result of this special meeting of our House of Delegates there will be a better understanding on the part of the medical profession of South

Carolina of the whole situation as it now is, and the profession will be better prepared to take part in any future efforts to improve the medical service to the people of our state.

The Chairman of the State Legislative Committee, Dr. R. G. Doughty of Columbia reported on the progress of medical legislation, particularly, the Workmen's Compensation Bill. This bill appears at present to be satisfactory in its medical aspects.

Dr. G. H. Zerbst, the newly appointed representative of the Federal Government addressed the House of Delegates in regard to the relief problems of the State. Dr. Zerbst will make contact with the County Medical Societies and be in position to facilitate adjustments where necessary in the administration of medical relief in the several communities.

For the first time, then, in the history of the South Carolina Medical Association we have just had a special call for our House of Delegates to meet together. The meeting was exceedingly harmonious and will be productive of much good.

TRIBUTE OF THE PEE DEE DOCTORS TO DR. F. H. McLEOD

A most remarkable evidence of esteem was that of the banquet tendered by the physicians of the Pee Dee Section of the State to Dr. F. H. McLeod of Florence on his birthday, February 26. Covers were laid for about 125 friends of Dr. McLeod. Eminent speakers were invited to deliver addresses on the various phases of Dr. McLeod's life. Among them were Dr. J. W. Jervey of Greenville, Dr. Robert Wilson, Charleston, Dr. C. R. May, Bennettsville, Dr. C. F. Williams of Columbia and Dr. M. R. Mobley of Florence. Dr. William Egleston of Hartsville acted as toastmaster. At the conclusion of the banquet a beautiful gold watch was presented by the physicians of the Pee Dee to Dr. McLeod and at the same time a lovely silver pitcher was presented by some of his friends of the Columbia Medical Society. Dr. McLeod has been one of the most outstanding physicians and surgeons of South Carolina. At one time he was Editor of the Journal and at a later date President of the State Medical Association. Dr. McLeod's interest in organized medicine knows no bounds. The McLeod infirmary with its new three hundred thousand dollar addition completed stands as a lasting monument to his energy, foresight and wisdom. This institution is now one of the largest and best equipped in the South.

While the occasion that inspires this brief editorial was a special tribute by some of Dr. McLeod's intimate friends it is well known that to have enlarged upon it would have been a difficult undertaking for Dr. McLeod numbers his friends by the thousands. The Journal congratulates Dr. McLeod on the splendid service he has rendered to his state and to the country and wishes for him many more years of commanding achievements.

PRESIDENT ELECT A. M. A. TO VISIT COLUMBIA, APRIL 8

South Carolina has been peculiarly fortunate this year in the visits of many distinguished medical men. Only a few weeks ago, Dr. Walter Biering, President of the American Medical Association, paid a visit to the Charleston Medical Society. Now comes the good news that Dr. James McLester of Birmingham, Alabama, President Elect of the A. M. A. will visit the Columbia Medical Society. The officers of the Columbia Medical Society have requested the officers of the State Medical Association to assist them in making Dr. McLester's visit a state wide event. It is desired that not less than five or six hundred doctors honor Dr. Lester by their presence. The meeting will be held at eight thirty on the night of April 8, further details of which will be published later. A state wide committee has been requested to serve as a publicity committee. The guest is one of the most distinguished internists in the United States. He was written largely and has become an international figure. His knowledge of nutritional problems makes him an authority on this subject. Dr. McLester will bring a dynamic message to all the physicians in South Carolina. We urge that plans be made now to accept the hospitality of the Columbia Medical Society by the members of the South Carolina Medical Association.

OUR GUESTS FOR THE FLORENCE MEETING, APRIL 23, 24, 25

The South Carolina Medical Association has always been fortunate in the matter of invited guests at the State meetings. This year it appears that we are peculiarly favored. The President of the Association and the Scientific Committee have endeavored to stress a program of great practical value to the members of the Association. In other words, the idea is for the members of the Association to really have a post graduate course this year of more than ordinary interest.

Dr. J. H. Stander of New York

The Association will be honored by the presence of one of the most distinguished obstetricians and gynecologists in the United States. Dr. Stander is the Professor of Obstetrics and Gynecology at Cornell University and Director of the Woman's Clinic of the New York Hospital, which is composed of the old Lying-In Hospital, the Cornell group of Bellevue and the Manhattan Maternity Hospital. This is one of the largest services of the kind in the world. Dr. Stander had an enviable record before going to New York. He was Assistant to Dr. J. Whitridge Williams, Obstetrician in Chief of the Johns Hopkins Hospital for ten years, and Associate Professor of Obstetrics there for the last five years of his stay in Baltimore.

Dr. William Bosworth Castle, Boston

Another guest of unusual attainments who will address the Association is Dr. W. B. Castle, one of the ablest clinicians and research workers in this country. He is Associate Professor of Medicine in the Harvard Medical School.

In 1931-32, he was Director of the Rockefeller Foundation Commission for Study of Anemia in Porto Rico.

Dr. Castle's chief contribution to medicine has been upon the etiological relationship of achylia gastrica to pernicious anemia. In a series of brilliant experiments, he demonstrated that the secretion of the stomach in the pernicious anemia patient is lacking in an enzyme like substance, present in normal individuals which forms, when mixed with meat, a specific hematopoietic substance. The first announcement of this discovery was made in April 1928. It clarified our knowledge of the cause of pernicious anemia and also gave rise to a new concept, namely, that of deficiency disease which may be conditioned by abnormalties of the gastrointestinal tract.

Dr. Castle has also made contributions in the field of diabetes mellitus, muscle metabolism, vitamine deficiency, pregnancy anemia, and iron deficiency anemia. In Porto Rico, working with Dr. C. P. Rhodes, he was able to clarify the deficiencies responsible for the anemia in sprue and hookworm disease.

Dr. Temple Sedgwick Fay, Philadelphia

Dr. Fay is Professor of Neurological Surgery at Temple University School of Medicine, Philadelphia. Dr. Fay is well known throughout the country for his contributions to scientific medicine. In recent years neurological surgery has made extraordinary strides and Dr. Fay will present a subject of extreme interest to general practitioners of South Carolina.

WILLIAM EGLESTON, M.D.,
1873-1935

Death of Dr. William Egleston, President of the South Carolina Medical Association

As the Journal goes to press we learn of the death of our President after an illness extending over several months. Dr. Egleston was born September 2, 1873, at Winnsboro, South Carolina. He was educated at the old Mt. Zion Academy there and at the University of the South, Sewanee, Tennessee. He was graduated in medicine from the Medical Department, University of Nashville, Tenn., in 1898. At one time he was a teacher in the Medical Department of the University of the South at Sewanee. In 1900 he married Annie Bonham Aldrich of Barnwell, South Carolina. He has practiced medicine since 1900 at Hartsville.

Early in his professional career Dr. Egleston became a profound student of preventive medicine, particularly with reference to malaria. At the Summerville meeting of the State Medical Association in 1909 he read a paper on the subject, "Sanitation in Small Towns." In this paper Dr. Egleston outlined the successful efforts in the control of malaria in the town of Hartsville. This represented pioneer work of the highest order and it was so recognized throughout he country.

Dr. Egleston's loyalty to organized medicine has brought to him many honors by the profession in his section of the State and his wide knowledge of public health as shown by the pioneer work at Hartsville led to his election to membership on the Executive Committee of the State Board of Health in 1909, following the death of Dr. James Evans of Florence. Perhaps, Dr. Egleston is best known throughout the State for his enthusiastic activities as a member of the State Board of Health. This was clearly demonstrated when he was elected to the Chairmanship upon the resignation of Dr. Robert Wilson from that position in 1931.

Dr. Egleston was the highest type of general practitioner of medicine. He had a keen insight into the advancement of modern medicine and practiced it to the day of his death from that standpoint. His was a magnetic personality and he was a leader in many lines of activities. His business acumen was often acknowledged by his being elected to responsible positions in banking circles. He was a civic leader of outstanding merit. He was likewise prominent in religious activities. He served his country during the world war as a Surgeon in the Medical Corps of the United States Army.

Dr. Egleston was conscientious in the performance of every duty and numbered his friends by the thousands. As president he gave to the South Carolina Medical Association of his finest efforts notwithstanding his affliction with a serious disease. It was his earnest wish that the meeting to be held in Florence next month should have a program second to none and he worked to that end throughout his long illness.

PRELIMINARY PROGRAM

Eighty-seventh Annual Session

SOUTH CAROLINA MEDICAL ASSOCIATION

Florence, S. C., April 23, 24, 25, 1935

The House of Delegates will convene on Tuesday evening, April 23, at eight o'clock.

The Scientific Program Wednesday and Thursday.

Dr. H. J. Stander (invited guest) of New York will present a paper, on Nephritis in Pregnancy.

Dr. W. B. Castle (invited guest) of Boston will present a paper on The Diagnosis and Treatment of Anemia and Certain Associated Deficiency Diseases.

Dr. Temple Fay (invited guest) of Philadelphia will read a paper on Head Injuries; Their Management and Treatment.

PAPERS

Time Limit Fifteen Minutes

This Whole Program will be Rearranged

1. The Practical Management of Acne Vulgaris,
   By J. Richard Allison, Columbia, S. C.
2. Malignant Melanoma (Black Cancer),
   By Kenneth M. Lynch, Charleston, S. C.
3. Differential Diagnosis of Bright's Disease,
   By James A. Bradley, Florence, S. C.
4. Fracture of the Hip Joint (Intracapsular)—A New Method of Skeletal Fixation,
   By Austin T. Moore, Columbia, S. C.
5. The Suppurative Pericarditis,
   By J. Emmet Madden, Columbia, S. C.
6. The Etiology and Treatment of Peptic Ulcer,
   By Wm. H. Speissegger, Charleston, S. C.
7. Subphrenic Abscess,
   By G. T. Tyler, Jr., Greenville, S. C.
8. The Tonsil As Seen Through the Eyes of the Pediatrician,
   By R. M. Pollitzer, Greenville, S. C.
9. The Treatment of Fractured Skulls,
   By C. O. Bates, Greenville, S. C.
10. Acute Laryngeal Stenosis in Children,
    By E. W. Carpenter, Greenville, S. C.
11. The Early Diagnosis of Chronic Arthritis,
    By O. B. Chamberlain, Charleston, S. C.
12. Diagnosis and Treatment of Ischiorectal Abscess and Rectal Fistulae (Lantern Slides),
    By Wm. H. Prioleau, Charleston, S. C.

THE SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION

This meeting will be held at Florence on Tuesday, April 23 at 10 A. M. A splendid program has been arranged and it is expected that among the guests will be Dr. C. E. Waller, Assistant Surgeon General U. S. P. H. S., and Dr. Harry S. Mustard, School of Preventive Medicine—Johns Hopkins.

The Public Health Meeting is one of the most attractive features of the State Medical Association and usually has an attendance of about one hundred.

THE WOMAN'S AUXILIARY

There has been an increasing interest in the Woman's Auxiliary to the South Carolina Medical Association. A strong Society has been organized at Florence and it is hoped that the largest meeting of the Auxiliary ever held will be the record at Florence this year. The Woman's Auxiliary will meet on Wednesday, April 24.

HOTEL ACCOMMODATIONS

Communications addressed to the Florence Hotel or to Dr. F. H. McLeod, General Chairman of Committees will receive due consideration. There are several good hotels and ample facilities for taking care of the Association. The final program will contain all this information in full detail.

COMMERCIAL AND SCIENTIFIC EXHIBITS

There has been a growing interest in educational and commercial exhibits. It is expected that this feature will be up to the usual standard.

LOCAL COMMITTEES

General Chairman, Dr. F. H. McLeod.

Arrangements Committee, Dr. L. J. Ravenel, Dr. O. T. Finklea, Dr. M. R. Mobley, Dr. W. R. Mead, Dr. P. D. Hay, Dr. E. C. Hood, Dr. E. M. Hicks.

Registration—Dr. L. J. Ravenel.

Meeting Place—Dr. O. T. Finklea.

Entertainment—Dr. M. R. Mobley.

Publicity—Dr. W. R. Mead.

Scientific Exhibits—Dr. P. D. Hay.

Commercial Exhibits—Dr. E. C. Hood.

Hotel Committee—Dr. E. M. Hicks.

ORIGINAL ARTICLES

The Importance And Ease of Prescribing Diets

By L. Paul Barnes, M.D., Bennettsville, S. C.

I consider it a great pleasure and honor to be placed upon this program, and my only regret is that I do not have a scientific paper that would add to your total of knowledge. It is my hope, however, that I may bring to your attention again, and further impress upon you, the importance of diet as a therapeutic agent in disease, and in prevention of disease.

It is conceivable that the practice of medicine will continue to advance with the same if not greater rapidity during the next ten years as it has in the past decade. It is interesting to speculate and endeavor to determine in which branch of medicine the greatest progress will occur. Probably few of us will agree, and surely no one can say with any degree of certainty, for tomorrow some unthought of discovery may change the entire direction of progress.

Not long ago a famous British surgeon stated that in his opinion further advances in medicine would probably come at the expense of surgery. This is another way of saying that when disease is prevented less curative treatment is needed. It also implies that the prevention of disease, or preventive medicine, is and will continue to receive more and more study. Now, while it is true that foods have become in many diseased states our most valuable therapeutic agent, they rank today, along with sanitation and immunology, as the important agents in preventing disease.

In 1932, Dr. Chalmers Watson, of Edinborough, stated in a lecture on diets that any important improvement in health would most likely come from improved nutrition. The two years that have elapsed since this statement was made have not proven his idea false. There has been a very definite trend towards the study of foods, both as a preventive agent and a curative agent in disease. At present much research work is being done, and many articles are being written and published that are increasing our knowledge of nutrition. The American Medical Association has in recent years established a Council on Foods. The members of this association are all familiar with the research study made on our South Carolina grown vegetables. Further proof of increasing interest in nutrition is the fact that during the past year our own Medical School in South Carolina has established a chair of nutrition.

The scientific world has not felt this awakening alone. Our patients have become diet conscious, and are demanding more information than ever before on this subject. It behooves us to be able to advise and prescribe the correct diet for our patients. If we lack information or fail to take the necessary time, they will turn to other sources for advice. How many of your obese patients, doctor, placed themselves on that preposterous low protein diet, called the Hollywood 18 Day Diet some few months ago? How many of your patients are turning to the highly advertised food products that are flooding the pages of all advertising media? These quasi-scientific food products greatly exaggerate their worth, and in many instances have done much harm. In reading the advertisements in our leading periodicals alone, little doubt is left in the mind of the reader that bran would not cure all types of constipation; that mixtures of dry milk, sugar and cocoa would not grow flesh on a scare-crow, and that yeast will not cure all digestive disorders, and every pimple that affects the brow of our debutantes.

The fact that these products are being advertised means that they are being sold and proves that your patients and mine are anxious to have their diets regulated. I feel that the stage is set for us to do immeasurable good in improving nutrition. The question is, are we prepared and will we take the time? I believe

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that we of the profession are better acquainted with the action of strychnine or digitalis than we are with turnip greens and cabbages. However, I do not wish to imply that you do not know your "Onions." It has been almost impossible for many of us, in order to save time, to resist the temptation to tell our nephritic patients "Oh, just don't eat any red meat." Many of us are prone to talk on and on to our patients about their "acid condition," which to the intelligent patient means that our ignorance is tiring, for they know that after the lecture they will again be advised to take bicarbonate of soda. I believe that the same kind of careful consideration should be used in prescribing diets as in prescribing thyroid extract, quinine, or any other drug.

The subject of my paper indicates that I am about to explain an easy way—a short cut—over the difficulties of prescribing diets. The title is not honest in its entirety, for I believe that each item of food should be studied much as we study the pharmacology of drugs; their composition (mineral, vitamin, carbohydrate, protein, fat, etc.); also their acid base reaction, their digestibility in health and diseased states, changes in composition during various methods of cooking, and incomptatibilities.

If this was easy information to acquire, I am sure that I would be better informed. However, I feel certain that when this data is secured or assimilated, the examination of your patient will indicate to you the amount and type of necessary food in the same way that your examination now leads you to choose a drug and prescribe its dose.

While it is imperative that every diet should be as individual as any other therapeutic measure, I have found it advisable, because it saves time and impresses the importance upon the patient, to type and have mimeograph copies made of certain foundation diets that are commonly needed in my practice. With these slips as a foundation, I find that it is quite easy to add or subtract foods to meet the demands of each individual case. On these slips an effort is made to inform the patient what we are trying to accomplish, why the diet should be of benefit, and how in a general way we hope to improve his or her condition.

If I may allow myself a few more minutes of your time, I would like to show you one or two of these Foundation Diets.

Lantern Slides.

I. LOW PROTEIN DIET

Christopher, Cecil, Practice of Medicine,

II. SMOOTH DIET

Modified after Alvarez

LOW PROTEIN DIET

This diet is prescribed because a low protein intake will place considerably less strain on the kidneys and because many foods besides meat contain protein, making elimination of this article alone insufficient.

1. Any combination of foods may be selected.
2. Foods not listed should be excluded.
3. Foods in group 1 and 2 are restricted in amount.
4. A full portion in group 1 counts one, in group 2 counts 2.
5. In group 3 there is no restriction in amount, but discretion must be used if patient is overweight.
6. Each point in the score is equal to 4.6 gms. of protein material.
7. Do not add salt or spices to food after cooking.
8. If the lack of salt is distasteful, salt substitutions can be used.

Your total score for the day should be_____

GROUP 1

Each full portion counts 1

Bread	*Full Portion*
Bread, white	One average slice
Bread, graham	One average slice
Uneeda biscuits	5 crackers
Shredded wheat	One biscuit
Graham crackers	5 crackers

Vegetables, etc.	*Full Portion*
Baked beans	1 tablespoons
Lima beans	1½ tablespoons
Potatoes, creamed	1 tablespoons
Potatoes, mashed	1½ tablespoons
Potatoes, baked or boiled	1½ tablespoons

Cereals	*Full Portion*
Oatmeal	2 tablespoons
Boiled rice	3 tablespoons
Cornmeal mush	4 tablespoons
Cream of wheat	6 tablespoons
Farina	6 tablespoons
Macaroni	4½ tablespoons
Canned Corn	2½ tablespoons
Green peas	2 tablespoons
Beets	5 tablespoons
Spinach	4 tablespoons
Bananas	2 large
Cream, heavy	¾ cup

GROUP 2

Each full portion counts two

Meat, etc.	*Full Portion*
Milk	1 glass
Egg	1 egg
Flour, sifted	2/3cup
Lamb chop, broiled	2/3chop
Lamb, roast	3″x2½″x¼″
Beef roast	3″x2″x¼″
Steak, broiled	2″x1″x1″
Chicken roast	3″x3″x½″
Fish, etc.	*Full Portion*
Fresh water	1″x1″x1½″
Mackerel	1″x1″x1½″
Shad	1″x1″x1½″
Other salt fish	1″x1″x1½″
Salmon, canned	1½ tablespoons
Oysters	7
Shrimp	6 small
Crab meat, canned	2 tablespoons

GROUP 3

No restrictions

Asparagus	Oranges	Peaches	Syrup	Apples
Cabbage	Cucumbers	String beans	Dry cereals	Apricots
Carrots	Lettuce	Tomatoes	Pears	Berries
Celery	Mushrooms	Onions	Sugar	Cherries
Squash	Turnips	Butter	Honey	Lemons
Pineapple	Grapes	Grapefruit	Candy	Cantaloupe

SMOOTH DIET

The object of this diet slip is to provide you with a diet that will contain a minimum of indigestible food and to reduce and soften the residue that enters the colon. This softer and less-irritating residue will cause less trauma to the intestinal tract. This diet is exactly opposite to the high residue bulky diet containing bran and other coarse foods, prescribed in atonic conditions of the tract.

Not only the choice of foods but the method of preparation and the manner in which they are eaten is of extreme importance. Below are some general hints to be used in preparing and digesting the diet:

1. Fried foods are less digestible than stewed, baked, and boiled foods.

2. Slow cooked vegetables, preferably pressure-cooked, are more digestible than pot-cooked vegetables.

3. Foods eaten in haste or while under any emotional excitement or strain usually enter the colon undigested.

4. An adequate chewing surface should be provided by your dentist.

5. Avoid drinking large quantities of water during meals as this washes the bolus down before salivary saturation is accomplished.

6. Rest after dinner (the heaviest meal), relaxing as completely as possible. This is extremely beneficial.

Selection of Food

Bread

White loaf-bread, biscuit made thin and browned well eliminating soggy center. Avoid whole wheat bread, bran muffins, and pastries.

Cereals

Cooked cereals are to be preferred—hominy, sifted oat-meal, cream of wheat, and rice.

Avoid shredded wheat biscuits, bran, and dry cereals containing large amounts of bran.

Dairy Products

Eggs, butter, butter-milk, and cream cheese may be used. Raw milk may be used, but it should be remembered that raw milk is often the source of trouble.

Meats

Tender cuts or pieces of chicken, fish, roast beef, steak, and squab, avoiding bristles and fibrous portions. Veal may be tried. Duck is best excluded.

Vegetables

At first all vegetables should be purated, eliminating skin, seeds, and cores. Select from the following list: white potatoes, sweet potatoes, lima beans, kidney beans, canned baked beans, English peas, field peas, carrots, beets, tomatoes, egg-plants, squash, rutabagas, and turnips. Avoid celery, lettuce, onions, string beans, mustard greens, broccoli, cabbage, kale, brussel sprouts, turnip greens, collards, corn, cucumbers, olives, spinach.

Fruits

Strained juice of oranges, grapes, or grapefruit; peaches, apple sauce, ripe bananas. Avoid melons, pineapple, berries containing seed, fruit skins and seed, and all nuts.

Beverages

Kaffee-Hag, postum, and cocoa might be tried if coffee and tea over stimulate, as is often the case.

DISCUSSION

Dr. J. W. Jervey, Greenville:

It is with great gratification that I see the finger of understanding pointed once more to the high value of nutrition in practical medicine, and the more so coming from one of our younger members. Nothing could be of more value to us than a thorough comprehension of the fact that surgery has about reached its culmination. Little more is to be expected from its aid than is already available. Undoubtedly, the future of medicine lies in the fields of nutrition and bio-chemistry, which must include the active application of the principles of endocrinology in such form and fashion as we may by degrees be able to bring it into our understanding. I do not like the term "diet." It has been said that "diet is a dangerous thing" inasmuch as it leads to a certain narrowness and uncertainty on the part of a patient and often enough the making of a hypochondriac. I prefer to tell my patient specifically that I am not putting him on a diet but that I am merely outlining some food suggestions which will be of assistance to him.

I further believe that the application of nutritional requirements of the individual can be much more easily accomplished than is generally understood in the profession. The terrible old equations and mathematical formulae of various kinds laying down hard and fast rules for a certain number of calories representing so much carbohydrates, so much proteins, so much fats, while not entirely useless at the present time no longer stand out with the same great importance as formerly. An individual consuming a reasonable amount of food, and assuming that it is of an acceptable kind for the particular individual, will with very little doubt obtain the necessary calory intake, but this intake must be represented by those foods which will supply the requirements for the maintenance of a normal acid-base balance. This being accomplished, the vitamin and mineral intake and particularly *organic* mineral intake, is almost, if not quite, of automatic adjustment, and it becomes unnecessary to speak of those things which are often so nebulous in the minds of the general practitioner, the hydrogen-ion concentration, carbonic acid saturation and other highly technical minutiae. I am not speaking of well-known specific diets in specific disease.

The indicator of the acid-base balance is most easily inspected in the mucosa of the nasal septum and as a rule the entire intranasal lining. Its relative color and local deposits will indicate to the experienced observer in almost every case whether an acid ash or an alkaline ash food is being predominantly consumed, and the direct result of this consumption is the cause of activation, in all probability, of either the sympathetic system on the one hand, or the parasympathetic on the other hand. It is also true that the ingestion of the various minerals will affect the activity of the autonomic system, and, as Blackmar has shown, it is important that this autonomic balance be preserved. In the very large proportion of cases it will be found that a sympathetic dominance places the patient in a zone in which he is subject to infection. In a case of parasympathetic dominance he is placed in the zone of so-called allergy. In maintaining his zone between these two we will maintain the autonomic level which means health, and in an overwhelming majority of cases this level is possible of maintenance by the regulation of foods, recognizing the influence of acid ash and alkaline ash foods and by the proper exhibition of suitable minerals and vitamins. Here lies the why and wherefore of the inestimable value of the work of our South Carolina Food Research Commission in pointing out the importance of the iodine in our soil. The iodine-chlorine balance, the sodium-potassium balance, may be classed as fundamental in the preservation of normality.

This is the way, and the only way, that the tissues of the body can be made to create and hold a proper metabolism and can either be kept or restored to a

normal habit which will resist the invasion of infection and will prevent the changing of a more or less natural infestation of microorganisms into a real infection. Too long our profession has attacked the seed (the invading organism) and paid little attention to the soil (the human tissues). The future will see a radical change in this attitude, and the effort will be so to prepare and nourish and maintain the normal tissue soil that infective seed can gain no foothold to produce disease. This theory holds good in many other forms of disease beside infection, and indeed must be the foundation stone for the prevention of all pathology.

It is extraordinary to what an extent the interest of a medical practitioner is increased by a little understanding of these fundamental principles. Try it, and see how much more zest and gratification is put into daily practice, when one observes the often startling and almost magical effect of these procedures in cases which have hitherto been considered, if not hopeless, at least uninteresting and tiresome.

Dr. Barnes is to be congratulated for bringing this subject up for consideration, and it is only to be hoped that these words will accelerate that which is absolutely sure to come any way before very long—that is, a wide-spread interest in the matters of nutrition, bio-chemistry and endocrinology. I commend them to your immediate interest.

Dr. William Weston, Columbia:

I wish to acknowledge my gratitude to Dr. Barnes for having given me the opportunity of reading his paper before coming to this meeting and also to congratulate him upon his point of view. I also wish to acknowledge my gratitude to this association for having endorsed the resolutions presented last evening, which are intended to extend the great humanitarian interest of the Federal Government in making a more careful study of foods in the various sections of the United States, along the line so auspiciously begun in South Carolina. In this connection may I call attention to the fact that the people of South Carolina are in a better position to judge the chemical qualities of their foods than are any other people in the United States, or for that matter in the world.

Foods differ in their nutritive value. There is one point which I wish to briefly call to your attention. The chemistry of vegetables and fruits differs in one locality from others. These differences often determine the sufficiency or deficiency of one or more minerals. In certain localities it is known that cabbage absorbs from the soil certain poisonous elements, the cyanides. It is well known that cabbage is a valuable source of calcium but on account of the presence of cyanides they will, when boiled, produce goiter unless they contain a high iodine content. This is due to a failure to bring about a balance between calcium, phosphorous and magnesia. The presence of iodine appears to overcome the effect of the cyanide in bringing about the balance.

Our studies in the chemistry of foods have resulted in discovering elements which as we had not suspected before. For instance, in the green leafy vegetables we formerly attached little importance or significance to chlorophyll. Subsequently we learned that we may associate it with a high vitamin A content.

Another element about which we know comparatively little has been discovered in vegetables and certain berries. This substance is known as myrtillin which seems to be concerned in the metabolization of sugar.

No doubt from the studies such as are contemplated and requested by this, the Southern Medical Association, and many other medical associations by the Federal Government in collaboration with our medical colleges we believe that many other important elements will be discovered, as well as the relationship of these elements to each other.

Dr. Roe E. Remington, Medical College, Charleston:

First, I wish to thank the Association for the privileges of the floor, not being a physician or a member of your Association.

It is a very hopeful thing that an association such as this gives space on its program to such a paper as Dr. Barnes has given us. The increasing interest among our people in the subject in which I am so vitally interested is reflected, I think, in the number of books that are appearing at the present time. I think there are no fewer than ten books that have appeared during the past year on the general subject of diet in health and disease.

By the way, I agree with Dr. Jervey about the word "diet." You know I, being more or less of a layman myself, see the lay point of view; and I notice that when my wife says to her neighbor that she is on a diet now, she expects sympathy. Of course, we are all on a diet all the time.

Unfortunately, this subject of nutrition is in a formative stage, and experimentation still goes on—and must go on when knowledge is not complete. There prevails an opinion among a great many people (and many physicians, I must say) that there is an instinct that will guide us in the selection of food. I wish I had time to go back and show that the selection of food depends upon habitude and living conditions rather than instinct. Races have gone down to oblivion because they lived in such places or their occupation was such that the food which came to them was not adequate for their needs.

Now, as to the advertisements that are published in the press and over the radio, the thought comes to my mind that the medical profession has been too ethical in not pushing out to the public more definite, specific information on this subject. I like the idea that your suggestion to your patient should not be: "Don't eat red meat" or "Don't eat carbohydrates," but rather that it should be definite and specific; if you can, mimeograph or print it. It should be something that impresses on the patient that you think it is

important. It should be something that is economically possible for the person for whom you prescribe it, because dietary treatment is not a matter of a few days but of a long period. We have been impressed with the fact that the treatment of pellagra, for instance, is not so much a scientific problem as it is an economic problem.

Dr. Barnes, closing the discussion:

I feel that my paper has been a perfect success. That might seem strange, but the object of it was simply that I might hear someone that knew something about this subject discuss it. I believe it is important, and I believe that many of us are throwing this very valuable therapeutic agent away. I thank you for your very valuable discussion.

Anemia in Infants And Young Children

C. Williams Bailey, M.D., Spartanburg, S. C.

In the last few years with the more exact and intensive methods of studying morbid processes there has come into being a renewed interest in anemia with a view to finding causes, studying chemical reactions, and attempting to do something about preventing the condition as well as correcting it. Babies used to be considered pale and little or nothing was said about it. Now a baby or any other person has cells counted and the percentage of his hemoglobin or iron determined and then an exhaustive study of cause and effect. The discovery of liver therapy by Whipple and Minot has given tremendous impetus to the treatment of anemia, so much so that nearly all medical publications contain voluminous reports of somebody's new ideas or experiments on the subject.

So voluminous are the discussions on anemias that this paper will not attempt to go into the subject beyond the work done in the last few years. Likewise time will permit only brief remarks outside of the most important and ever present secondary anemias. The so-called primary anemias are rarely encountered in young children, and indeed many good men rather doubt that any anemias are primary. Dr. Morse says that the normal peculiarities of the blood in infants probably account for a great many uncalled for classifications of anemia. Examples of this are primary pernicious anemia, and aplastic anemia, both of which may be only rare and atypical cases of secondary anemia.

One unfamiliar with the variations of the blood at different ages might easily be misled. At birth the hemoglobin is about 110 per cent-120 per cent and red cells correspondingly high. Helen Mackay, studying anemias among London infants over a period of 3 years with 770 cases and 3,100 hemoglobin estimations, concluded that anemias were largely nutritional in origin and due to iron deficiency, and that infants derived an adequate supply of iron from their own liver to meet their needs during the first few months of life. Hemoglobin falls sharply from birth to about 65 per cent at two or three months, then rises to 70 per cent at the 5th or 6th month, then falls steadily to 65 per cent at the end of the first year.

This report is in agreement with Finkelstein, Goodfellow, and most observers. It is stated also that these hemoglobin values are about 5 per cent lower for artificially fed babies. From this time the hemoglobin and erythrocytes remain about the same for a year and then slowly rise to a normal of 80 per cent at six years. H. Finkelstein says that 80 per cent is the highest limit obtainable by treatment in infants. In other words, a hemoglobin of 80 per cent is as high a normal as can be produced. A. C. Hampson states that a rapid hemolysis after birth produces the relative anemia found later. The iron stored in the liver necessarily reaches there in utero. It is interesting to note here that Strauss found that the offspring of very anemic women were born with as high hemoglobin and erythrocyte counts as those of women who were not anemic. However, under the same living conditions at the end of a year the infants of the anemic mother's hemoglobin averaged 46 per cent and those of normal mothers 67.1 per cent, a difference of 21 per cent. Neale and Hawksley following their studies on the blood of women during pregnancy and on the young infant offsprings of these pregnancies concluded that anemic infants are often born of anemic mothers, that anemia during pregnancy is common, and that the infant's iron reserve is low because of reduced iron in the maternal blood. They also found that feeding iron containing foods and

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medicinal iron and copper during pregnancy prevented the development of hypochromic anemia. They state that a congenital anemia may be a true nutritional anemia due to deficiency in the maternal diet. Not all infants born of anemic mothers, however, are necessarily anemic. All investigators agree that iron is the all important factor influencing anemia. Breast milk and cow's milk are very low in iron. Therefore, these questions present themselves: Is the relative paucity of red blood normal in young infants comparable to their initial loss in weight, or has Nature slipped a cog in providing for infants, or are prenatal conditions more responsible than is now known? Maurer *et al* have produced convincing evidence that a small quantity of breast milk facilitates the absorption of iron and causes greatly increased absorption of iron from cow's milk fed simultaneously. Krasnogorsky found the same true of a combination of breast milk and goat's milk. It was found that only six ounces of breast milk a day caused markedly increased absorption of dietary iron. Regardless of the why or wherefore, serious anemias are often found at the end of the first year in infants and often in young children during the pre-school age. The latter are almost invariably due to a combination of poor eating habits plus infections.

The most frequent and troublesome anemias of early infancy may be classified in order of their importance as:

1. Nutritional—due to some dietary insufficiency.

2. Constitutional—Prematurity, twins. These cases exhibit evidences of either poor and under-developed hematopoetic systems or abnormally poor iron storage from the maternal source.

3. Infections, particularly upper respiratory.

4. Hemorrhage.

5. Hemolytic jaundice—a familial disease manifested by blood destruction of unknown cause and cured by Splenectomy.

6. Primary anemia of the new-born. This is a strange, spontaneous, severe anemia which develops about the first or second week of life. No cause such as hemorrhage can be found, and recovery usually takes place. There is only mild icterus. The condition is rarely seen.

In older children:

1. Improper diet or deplorable eating habits.

2. Infections, Acute—mostly upper respiratory and childhood diseases. Chronic infections such as tonsils, adenoids, sinuses, and abscessed teeth, nephritis and pyelitis are of equal if not greater importance.

3. Intestinal Parasites.

4. Hemorrhages, such as nose bleed, purpura, hemophilia, etc. It would be amiss here not to emphasize the importance of the subacute and chronic infections referred to above. These conditions impoverish the blood and the child's vitality slowly but surely, and for a long time their disastrous effects are not realized. Chronic colds, diseased tonsils and adenoids and sinuses, and particularly alveolar abscesses are frequent conditions which militate against a child's well being and are manifested chiefly by anemia and anorexia. Another thing which produces anemia and general debility is improper care during convalescence from an acute disease.

It is rather difficult to evaluate the symptoms of secondary anemia. The causes of the condition may have faded out into the background, or the symptoms of the causative condition may still persist. There is, however, a general agreement that the anemia per se produces pallor of skin and mucous membranes, and that these children have very little endurance, irritable disposition, poor appetite, dyspnea, and may have intestinal and gastric symptoms, cold extremities, insomnia, headache, and even syncopal attacks. The fatty tissues may not be diminished, but the muscles are flabby. They may and often do have cardiac hypertrophy and a loud hemic heart blow. The spleen is often markedly enlarged and the liver somewhat enlarged from hypostatic congestion. In some cases there is anasarca, but this is usually due to an unbalanced diet, most often inadequate protein with an excess of carbohydrate. The blood is of the achromic or chlorotic type. The hemoglobin may be down to 10 per cent or 20 per cent and erythrocytes about one million. The color index is low. There are varying pictures of blood regeneration exhibiting many reticulocytes, nucleated red cells and poikilocytes. As a rule the younger the infant the more immature the cells seem. The platelets

are normal and fragility normal or increased, except in hemolytic jaundice, in which the fragility is decreased. The white count is normal or varies according to the influence of the primary cause of the anemia.

As to prognosis it may be said that few cases of anemia die of the anemia. Death may be due to the cause of the anemia or to sepsis, but is most often due to an intercurrent infection. These anemic infants and children have their general resistance so lowered that they often take cold and die of broncho-pneumonia or succumb to lobar pneumonia. Lehndorff states that in general the usual diseases of infants occur three times less often in infants treated prophylactically with iron than in untreated infants.

Since the symptoms of anemia develop slowly and insidiously and no trace of the primary cause may be seen, it becomes necessary in some cases to rule out by a study of the blood the primary anemia and related diseases. Pernicious anemia is either excessively rare or nonexistant before about the tenth year. There is a high color index, many megalocytes, decreased platelets and decreased fragility.

Aplastic anemia is diagnosed chiefly by its constant lack of response to treatment, decreased reticulated red cells, greatly decreased platelets, increased fragility and absence of nucleated forms.

Von Jaksch's Pseudoleukemia exhibits a tremendously enlarged spleen, lymphocytosis, increased platelets, moderate number of myelocytes.

Sickle cell anemia is found practically entirely in negroes and is characterized by the characteristic cells.

Chlorosis is becoming more uncommon as time goes on. It is an achromic anemia found mostly in girls at puberty.

Gaucher's Disease occurs in early childhood and progresses slowly, lasting twenty years or more. The anemia is moderate, and there is an enormous splenic enlargement and some enlargement of the liver. The finding of typical Gaucher cells in the spleen, bone marrow, or liver proves the diagnosis. It is familial.

Banti's Disease, often called splenic anemia, is found in late childhood. It is characterized by slow progressive enlargement of the spleen over a period of years, followed by enlargement of the liver, hepatic cirrhosis, and ascites. There is marked anemia. Splenectomy is the one hope of recovery.

The treatment of secondary anemia divides itself into prophylactic and curative. Aside from preventing disease and chronic infections and a strict adherence to personal hygiene and proper diet, iron seems to hold the center of the stage as of old. For many years iron was used in all the simple inorganic forms. Then there was a period during which complex and high sounding organic iron componnds held sway. Now the simple iron salts are used by practically everyone in preference to the more elaborate compounds. Nowadays the pharmaceutical houses manufacture medicines in very attractive and convenient forms. Iron salts in solution, iron in capsules, iron and copper in the proper dosage, and iron and liver extract are on the market, and are very conveniently prescribed. There is a substance called Copperin, which is a capsule containing a soluble organic iron and small doses of copper. This gives very good results. Lilly puts up iron and ammonium citrate and liver extract in a capsule of convenient dosage. This is called Lextron. There seems to be a general state of confusion and disagreement as to the proper dose of iron to give. In the main the doses sound unnecessarily large when one takes into account the fact that a large part of the iron comes through in the stools.

Premature babies and other babies coming under the class of immatures practically always develop anemia at about the second or third month. It is these cases in which prophylactic treatment is most indicated. Since liver extracts have proven to be very efficacious, it has been demonstrated that these weak babies may be given liver extract and also iron daily. Hugh Josephs in 1931 concluded that iron or iron and copper were not very effective preventive measures for anemia but that iron used with liver was more successful. 10 per cent Ferric Ammonium Citrate, 2 c. c.'s per kilogram body weight per day and .5 per cent copper sulphate, 1 c. c. per kilogram body weight per day were used. Lewis uses .5 per cent copper sulphate solution 1 to 2 teaspoonfuls daily and .1 to .4 gms. Ferrous Carbonate daily. Reducing

iron in doses of .1, .5, to 1 gram daily may be given these nursing infants. It is often given with 1 per cent Hydrochloric Acid Solution in order to convert the iron into Ferrous Chloride. Steenbock showed that experimental alimentary anemia of rats and rabbits produced by cow's milk can be prevented and cured by commercial iron salts but not by highly purified iron salts. He finally concluded that the addition of small quantities of copper produced the best results. He used .05 to .1 mg. of copper daily.

In the treatment of secondary anemias a great many factors have to be considered,—the existing cause, the severity of the anemia, the diet of the child, the presence of infections, etc. The first thing to do in all cases is to determine the cause of the anemia. If it is an infection, removal of the infection is the only thing which will cure the anemia. If it is an infectious disease, time and proper feeding will usually restore the child to health. If it is the diet, dietary re-arrangement with a considerable amount of reinforcing the diet is the first consideration. All observers agree that iron given during an acute illness or in the presence of an infection does not have any effect. Some men are so enthusiastic about iron that they give it during acute infections and claim that the iron increases the appetite.

In very acute and severe anemia, blood transfusion is the first treatment of choice and produces prompt, though temporary, upbuilding of the blood. The transfusion must necessarily be followed by liberal well-balanced diet and addition of iron and often some form of liver to produce permanent results. Intravenous transfusions cause less discomfort and more prompt improvement in the blood but often do not cause as much improvement as intraperitoneal transfusions. Blood may also be given every 24 to 48 hours intramuscularly with good results. The main drawback to this method is, however, the discomfort produced. Siperstein states that intraperitoneal transfusion is the method of choice wherever a slow transfusion is desired as in some cases of malnutrition and severe secondary anemias in infants.

It is usually easy to increase hemoglobin from a very low figure, even as low as 10 or 15 per cent to 50 per cent, by giving transfusions followed by the other measures just mentioned. It is, however, always difficult to increase hemoglobin from 50 per cent to normal and usually requires months or a year or more. Lehndorff states that very slight anemia with hemoglobin 70 per cent or above is entirely refractory to anti-anemia medicaments. He further states that in the presence of normal blood certain of these remedies are even harmful. If during treatment an infection occurs the hemoglobin and red cells promptly drop and will not rise again until there is recovery from infection. There is still a very great difference of opinion as to whether or not addition of copper is of benefit. In fact, copper as an activating agent is about to be discarded. Helen Mackay states that copper deficiency in even anemic babies is uncommon. At first it was thought that liver had no place in the treatment of secondary anemias but now there is a general agreement that liver stimulates an increase in the number of red cells but does not increase the hemoglobin. Almost all of the iron salts and also reducing iron are used.

Josephs believed in 1931 that iron has its first effect on the reticulocytes and then on the hemoglobin and there usually exists a latent period before the effect on the hemoglobin is manifested. The end of this latent period appears to coincide with a sufficient rise in reticulocytes. He states that coppear appears to increase hemoglobin but has no effect on reticulocytes. The present trend is to give rather large doses of iron even to small infants. It would seem that a large percentage of this iron would be lost in the stools. Maurer and coworkers demonstrated that the positive iron balance, or the amount of iron retained in the body in infants, was not influenced so much by the amount of iron given but by certain so-called activating agents which rendered the iron available to the body. They found that copper did not increase the iron retained but that small quantities of breast milk and also liver extracts produced marked improvement in the iron balance. Snelling found that in premature infants the average daily positive iron balance was 1/10 mg.

Attention is repeatedly called to the fact that cow's milk reduces the amount of iron absorbed. Kleinschmidt even goes so far as to mention

the possibility that cow's milk lacks some quality of breast milk in influencing iron balance. The diets of anemic infants and children should be liberal and well-balanced and milk reduced to a minimum. The feeding of liver, beef juices, beef, egg yolk, vegetables, and other foods rich in iron, most probably supply sufficient copper for these children. Fruits, particularly prunes, apricots, and peaches are also mentioned as effective foods in anemia. There has not been any definite or conclusive evidence that abnormally high concentration of vitamins is helpful. Hypodermics of iron and iron and arsenic are used little if any, except when iron can not be given by mouth. Grulee found that colloidal iron as ferric hydroxide can be given in solution intraperitoneally with good results. All iron given by mouth has to be changed into the bivalent or ferrous salts in order to be dissolved and prepared for metabolism. The trivalent or ferric salts are not effective unless, of course, they are reduced by the action of the digestive juices.

After a consideration of the many opinions and methods of treating anemia the following plan is suggested as rational and effective.

1. The prevention of anemia in infants should begin by treating the anemic mother during pregnancy.

2. The prevention of anemia as applied to premature and immature infants is best obtained by giving iron and liver extract or iron and minute doses of copper daily beginning at about 2 months of age. Iron and ammonium citrate 3 grs. (.2 gm) and copper sulphate about 1/16 gr. (.004 gm) per day to the average small infant are ample doses.

3. In treating secondary anemia the first consideration should be removal as far as possible of the cause.

4. Transfusion in the beginning and repeated when necessary if the anemia is very severe.

5. Dietary rearrangement, reducing milk to about 1/2 to 1 pint a day and supplying meat, vegetables, and whole grain cereals liberally. Mead's Cereal can be used to advantage. There have also been favorable reports on Spintrate. If, however, the age or condition of the infant or child makes liberal feeding too risky, milk must continue to be the main diet, and other foods added as digestive capacity increases.

6. There should be ample concentration of the usual vitamins in the diet but unreasonably large amounts of vitamins are not necessary.

7. Iron medication should be started early and continued daily for week or months. Ferric ammonium citrate is a soluble not unpleasant form of iron and is satisfactory in 10 to 15 gr. doses daily. The addition of copper sulphate in minute doses, although of questionable value, does no harm and might often be given with the iron in order to give the patient the benefit of the doubt. If there is not satisfactory blood improvement in 3 or 4 weeks calf's liver should be given daily in the diet or liver extract given with the iron.

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PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 282, FEBRUARY 1, 1935

Service of Dr. Chamberlain

Student Siau (reading):

White male, age 63 years, unemployed iron and brass moulder, admitted 10:45 A. M., 12-5-34, died 8 P. M. of same day.

History: "Caught a cold" about 1 month ago, but has had a productive cough for about 1 year, bringing up great quantities of thick greenish yellow sputum. No fever or sweats, no hemoptyses. No anorexia or weight loss. Has "gas on stomach" frequently, occasionally nausea and vomiting. Constipated. Occasional pain over heart and palpitation, associated with shortness of breath. Only past illness is "intermittent fever." Hydrocele for 15 years.

Examination: Temp. 98, pulse 130, resp. 40, B. P. 175-90. An elderly man, with cyanosis, and marked engorgement of veins, of neck. Veins of both upper extremities are engorged, and "large snake-like veins may be seen over abdomen and extending up over chest wall." Pupils contracted, react sluggishly. Tonsils and pharynx negative. Chest: Percussion flatness on right posteriorly, with diminished breath sounds. Tubular breathing on right anteriorly, with crepitant rales. On left, some diminution in resonance. Fine and coarse rales throughout entire lung fields. Mediastinum "apparently widened." Heart: "enlarged." Regular in rate and rythm, tones of good quality. No murmurs heard. Some thickening of vessel walls. Abdomen: Liver enlarged to umbilicus, and tender. Spleen not felt. "Enlarged tumor mass in left side of scrotum. Firm and painless." Prostate not enlarged. Reflexes: "extremely sluggish or absent." No abnormal reflexes obtained. Eyegrounds: engorgement of retinal veins, possibly some slight edema of disc.

Laboratory: Hb. 85 per cent (D); W.B.C. 15,250; polys 72 per cent; lymphs 24 per cent; monos 4 per cent. No further laboratory data obtained.

Progress: Temperature rose to 100.2 at 4 P. M., pulse 110, resp. 40. His respiratory difficulty grew worse, and cyanosis increased, with drenching sweat. Pronounced dead at 8 P. M. of day of admission.

Dr. Chamberlain (conducting): Mr. Shealy, will you give your idea of this case?

Student Shealy: The distended veins over arms, chest and abdomen suggest some form of venous obstruction, probably in the mediastinum. The man's age suggests malignancy as the cause. Aneurysm could give the same picture, but there should be more physical findings if the aneurysm were giving almost complete obstruction of the superior vena cava. This history of a productive cough for one year suggests some chronic chest condition. The lack of such symptoms as anorexia, fever, sweats, and weight loss tends to exclude tuberculosis, altho not necessarily so. Tuberculosis could possibly cause such a condition, by glandular and scar tissue compression of mediastinal structures. The chest findings suggest fluid there, and this could also be easily explained on a basis of tuberculosis. However, I am inclined to lean towards aneurysm.

Dr. Chamberlain: Whatever it is, where must it be located?

Student Shealy: In the mediastinum, probably the upper mediastinum. Such an obstructing mass could explain everything in the case except the liver enlargement, and I have trouble correlating that with the other findings.

Dr. Chamberlain: By omission, you have probably considered the arteriosclerotic changes as a different process, not related to the present illness. Having excluded tuberculosis, how do you explain the cough?

Student Shealy: This probably results from the mediastinal pressure, with a resultant bronchiectasis.

Dr. Chamberlain: Do you think the gastric symptoms mentioned have any part in the present condition?

Student Shealy: I had not considered them as related directly.

Dr. Chamberlain: In connection with the possibility of malignancy, what do you note in the history and findings of possible importance?

Student Shealy: The swelling in the scrotum. The description of this mass as "firm and painless" suggests syphilis, but I believe that syphilis is not concerned in his present condition.

Dr. Chamberlain: Mr. Tobin, can you add anything?

Student Tobin: I would like to know if a Wassermann was done.

Dr. Chamberlain: No. The patient died unexpectedly, and the laboratory data is far from complete.

Student Tobin: The enlarged and tender liver suggests that the obstruction might be in the liver instead of in the mediastinum. On the other hand, if there is fluid in the chest, as would appear to be the case, this could give displacement of the liver without actual enlargement. The venous distention doubtless represents the collateral circulation established as a result of venous obstruction. As both innominate veins are apparently obstructed, the process would appear to involve the superior vena cava. Was an attempt made to determine the direction in which the veins filled, so as to be able to rule out obstruction in the liver or inferior vena cava, with collateral circulation established in the opposite direction?

Dr. Chamberlain: If so, it was not recorded on the chart. I didn't get to see the patient, as he was admitted after I had made rounds, and died during the same night. Let's ask the Anatomy Department if the valves in the veins will permit blood to flow in either direction.

Dr. Lassek: In a man of this age, especially with such dilated veins, the valves would be incompetent, and permit blood to flow in either direction.

Student Tobin: The distended retinal veins are a further indication of obstruction of the superior vena cava. If this is by a malignant tumor, it would be either primary or secondary. If secondary, the primary tumor could well be in the scrotum, altho the abstract leaves the question as to whether that is mass or hydrocele.

Dr. Chamberlain: Miss Willis, will you discuss the chest findings?

Student Willis: These findings rather suggest tuberculosis, but the lack of correlated symptoms would tend to rule this out, as suggested by Mr. Shealy. The man's work suggests the possibility of an occupational dust disease, altho I note that he has been unemployed recently. Too, simple pulmonary congestion from venous stasis, could cause the productive cough. And a mass, to obstruct the superior vena cava, might well obstruct the bronchi, giving bronchiectasis or even lung abscess; he does not seem toxic enough for the latter, however.

Dr. Chamberlain: The widened mediastinum does suggest such a mass. Would anyone else suggest anything?

Student Lemkin: Is the apex beat located? A determination of this would seem important, since the possibility of fluid has been considered.

Dr. Chamberlain: That would be of value, but it is not recorded.

Student Lemkin: I believe that the increased blood pressure might be connected to the present condition, representing an attempt on the part of the arterial system to overcome the venous obstruction.

Dr. Lynch: Wouldn't it rather be that tissue anoxemia tended to increase the rate and force of the heart's action? Will the Physiology Department discuss increased heart action in an attempt to overcome venous obstruction?

Dr. van de Erve: I believe that tissue anoxemia would be the most important factor. But Bainbridge's reflex, acting by the increased pressure in the superior vena cava, would also bring about an acceleration of the pulse, and an increase in heart action. I doubt if this would give as great an increase in blood pressure as is seen here.

Dr. Chamberlain: And theoretically, at any rate, pressure on the cervical sympathetic chain in this case might account for a rapid pulse. I would believe, however, that the increased blood pressure was already present, and that it was not brought about by the venous obstruction.

The subject has been well covered except for the enlargement of the liver. Will anyone comment on this?

Dr. Cannon: The fact that the liver is tender as well as enlarged suggests that enlargement has taken place suddenly. Sudden enlargement of the liver is rare with malignancy there. If I could be satisfied that the scrotal enlargement were not a malignant tumor, I would lean towards aneurysm to explain the whole picture: venous compression, cough and hydrothorax. His mode of death certainly suggests respiratory difficulty.

Dr. Lynch (demonstrating autopsy specimens): This is a very unusual case, but two things can be learned from it.

First, syphilis can do anything. This man had a syphilitic infiltration in and about his superior vena cava, beginning about 3 cm. above its termination, and extending upward. At its narrowest point it would barely admit a small probe. The infiltration extended up into the right side of the neck, along the right innominate vein, with extensive infiltration of surrounding structures. At autopsy the process was thought to be syphilitic and not tuberculosis or malignancy (altho either could conceivably do the same thing), because the lymph glands were apparently not involved. This assumption was confirmed on microscopic examination.

Most of the class is familiar with this case, as they saw the autopsy, but I will run over a few of the things noted. The head and shoulders were intensely cyanotic and edematous, and the thoracic and abdominal veins were markedly enlarged and tortuous. The capillary system was so distended with blood that the autopsy incision bled readily, a very unusual thing. There was at least 1000 cc. of clear amber fluid in the right chest, with somewhat less in the left. The seeming enlargement of the liver was merely downward displacement; at autopsy the edge of the liver was noted at the iliac crest, but the liver itself was not enlarged. The mechanical collapse of the lungs by these pleural effusions added greatly to the respiratory embarrassment.

The interne who examined this patient on admission was under the impression that the scrotum contained a malignant tumor, and that metastasis had occurred both to the liver and the mediastinum. Such an assumption is not necessary to explain the enlarged and tortuous veins, and such an occurrence would be very unusual. The absence of ascites would certainly go a long way to rule out portal obstruction. As a matter of fact, the testicle was not enlarged; it was rather compressed by an accumulation of clear fluid in the tunica vaginalis. Evidences of syphilis could be found microscopically in the tunica.

Examination of the head was not permitted, but it can be assumed that stasis there would be nearly complete. Anoxemia of the brain was doubtless the immediate cause of death in this case.

Dr. Prioleau: What was the source of the purulent sputum?

Dr. Lynch: In the absence of gross or microscopic evidence of disease of the lungs and bronchi, this must be assigned to venous congestion.

A thing which I had neglected to bring out was the involvement of the thoracic duct in this case. It and all its tributaries were markedly dilated. This obstruction to the lymphatic drainage from the thorax was probably an important factor in the development of the bilateral hydrothorax. The venous obstruction also prevented the normal drainage of the parietal pleura by the intercostal veins, and this also tended to permit the development of hydrothorax. The venous drainage from the peritoneal cavity could be handled by the inferior vena cava, so that ascites would not develop.

The second thing of general importance to be learned from this case is the method of detouring the venous circulation when normal channels are obstructed. Dr. Lassek of the Anatomy Department will describe this.

Dr. Lassek (demonstrating lantern slides): To understand the compensatory mechanism by which the upper part of the body can be drained when the superior vena cava is obstructed it is necessary to comprehend the possible venous anastomotic channels between the superior and the inferior vena cava.

The superior vena cava is formed by the union of the right and left innominate veins. Each innominate vein is formed by the internal

jugular and the subclavian from that side. The subclavian is the continuation of the axillary vein from each arm. With complete occlusion of the superior vena cava, the most prominent route for the establishment of a collateral circulation would be from the axillary to the femoral via the sperficial veins on either side of the trunk (from above downward, the lateral thoracic, thoraco-epigastric, and the superficial epigastric). The femoral, of course, empties eventually into the inferior vena cava.

This last slide illustrates the lymphatic system. The thoracic duct and the right lymphatic duct terminate in the venous system at the junction of the internal jugular and the subclavian veins on their respective sides. The lymphatic drainage would be hindered in this case by the occlusion of the superior vena cava, and the high venous pressure could keep the terminal valves of the lymphatic ducts closed. The strength of these valves is proven here, as there was no blood in the lymphatic system.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

UNTOWARD RESULTS OF T. & A. DUE TO ALLERGIC AND ENDOCRINE IMBALANCES

J. A. Haiman, M.D., Eye, Ear, Nose and Throat Monthly, Jan. 1935, p. 39

To some it may seem unnecessary to discuss any phase of the tonsil question. But as a final analysis tonsils are removed or should be removed to cure certain conditions; some of these conditions are susceptibility to colds, including sinusitis and bronchitis. Though some forms of sinusitis may antedate the tonsil infection and even be a cause of the infection in the tonsils.

Sinusitis causes the cilia to disappear and the epithelium to change from the columnar type to the stratified type. It also causes the sectetion to become mucopurulent, thick, ropy, tenacious and irritant.

Nasal mucosa is water logged and nasal breathing is interferred with. According to Dr. L. W. Dean, sinusitis is common in children. This rhinitis that persists or sinusitis that is caused may not be caused by the tonsils at all. But either or both may have an allergic basis. Therefore before removal of tonsils, especially if a rhinitis or sinusitis is present, the patient should have a history taken with reference to allergic factors. The history should be particular to include:

1. Whether either parent is allergic, for heridetary allergy plays an important part in the etiology of many of these infections.

2. If there be an endocrine imbalance.

3. If the blood calcium be deficient calcium may then be given intravenously.

4. Foods should be investigated as well as pollens, and bacteria. Foods are important for milk, eggs, fats, starches, condiments or fish may cause the trouble. (I now have a case that has an angioneurotic edema of the face every time he eats fish.) One should try each elimination for two weeks to test whether that food causes trouble.

5. Sinusitis.

Dr. Haiman thinks siusitis is fairly frequent in children. But he does not believe in puncturing the antra as soon as Dr. Dean. He advises antra punctures and irrigation only in those cases where X-ray reveals marked persistent clouding of the antra and when local treatment and suction has not eliminated the purulent secretion.

But one of the chief reasons for drawing attention to Dr. Haiman's paper is to call attention to a fact that we may at times overlook. That fact is that the cause of recurrent or persistent attacks of rhinitis or sinusitis may often be found to be from an allergic or endocrine imbalance, rather than from tonsillar pathology.

This persistent rhinitis or this sinus infection may not be due to diseased tonsils. But either the rhinitis or the sinusitis may have an allergic basis.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"OPERATIVE PROCEDURES FOR APPENDICITIS"

In this column an attempt is made to present the best surgical thought of the day. Unfortunately there is no absolute standard to guide us. What is considered best is both a matter of individual opinion, and varies under different conditions. This is by way of explanation of the somewhat divergent opinions quoted from time to time

Not many months ago there was published in this column the resume' of an article in which the author deprecated the routine use of the McBurney incision for appendicitis. The contentions were that it often gives insufficient room; that frequently the diagnosis of appendicitis can not be made sufficiently accurately to warrant such a limited exposure; that other simulating conditions may be easily overlooked, and finally that in the cases of so-called chronic appendicitis, the symptoms are frequently due to some other cause. The foregoing is based upon sound reasoning and experience. It is certainly the truth, though it may not be the whole truth.

On the other hand we have the opinion of Dr. Mont R. Reid with conclusions formed after an analysis of over 2000 cases of acute appendicitis in the Cincinnati General Hospital. (S. G. & O. LIX: 529—Sept. 1934). From 1915 to 1922 operations for acute appendicitis were performed through a rt. rectus incision. During this time 409 cases were operated upon with a mortality of 9.8 per cent. In 1922 the McBurney incision was adopted for acute appendicitis and has been used exclusively since then. During this time there have been 1626 cases with a mortality of 5.2 per cent—a decided decrease. While other factors remained essentially the same, the only definite change in the treatment of the cases was in the type of incision employed. For this reason the author brings up the question of whether the surgical technique of appendectomy is playing a more important part in the mortality statistics than is generally recognized. He points out what he considers are the recognized advantages of the McBurney incision: (1) there is less soiling of the peritoneal cavity; (2) there is less necessity for handling the intestines, for usually it is necessary to touch only the cecum and the appendix; (3) the use of gauze packs can be almost eliminated; (4) drains can be placed along the parietal peritoneum and they soon become extra-abdominal; (5) wound complications are less; 6) convalescence is shorter, and (7) the healed wound is less disabling.

The point is brought out that even though the diagnosis of appendicitis is in error, most conditions simulating it can be detected or adequately cared for through this incision. However should this not be the case, a second incision may be made, the patient having suffered very little harm from the McBurney incision, which often may be used for drainage. In cases of so-called chronic appendicitis, it is the author's policy to remove the appendix through a McBurney incision, with the preliminary understanding that if the symptoms are not relieved, an exploratory laparotomy will later be necessary.

Ed Note: The foregoing practice is based upon the following premises—(1) that the McBurney incision is a relatively minor affair compared with the straight incision as to both mortality and morbidity; (2) that the diagnosis of acute appendicitis is accurate in the great majority of cases—and in most of the remaining group the condition can be cared for through this incision or is of a type for which operative interference is not indicated; (3) in the so-called chronic case, the symptoms are relieved in a sufficient number by appendectomy to warrant this as a trial procedure. The facts are given as cited in the literature. There are distinct advantages for both the McBurney and the straight incision. The question comes up as to whether either type should be used routinely in cases diagnosed as acute appen-

dicitis. In considering the subject it must not be lost sight of that many other factors besides the operative procedure enter into the morbidity and mortality of these cases. The choice of incision will have to be made by each individual according to his own lights.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

THE CHRONICALLY INFECTED CERVIX UTERI

There is undoubtedly some question as to what should be the attitude of the general practitioner, yes, and of the specialist as well, with regard to treatment of the cervix uteri. So far as this applies to examination and suture of the cervix immediately after childbirth, there is much ground for question, and in the opinion of the writer it is the wiser practice not to expose the cervix of such a patient to examination except in the delivery room of a well appointed hospital or exceptionally, in the patient's home, where there is serious bleeding, not controlled by a strongly contracted uterus.

However, in other patients, the writer is just as strongly of the opinion that the cervix should always be examined and if diseased that treatment should be instituted.

"Female trouble" has ever offered a fertile field to the quack and to the patent medicine manufacturer and no doubt many a dollar has been spent and many an hour wasted for treatments that were no more than ignorant piddling on the part of regular, but untrained, practitioners.

Perhaps, because of the feeling that these facts have resulted in attaching a stigma to office gynecological treatments, there has been a tendency on the part of some well trained and conscientious men to avoid this type of treatment.

Infections of the cervix are deep seated and persistent. The glands of the endocervix are deep and branching. Cervical infections are relatively rare in virgins and are most frequent in parous women. Deep or even minor lacerations of the cervix, with greater or less exposure of endocervical mucosa to vaginal secretions, traumatism by contact with vaginal walls and during sexual intercourse and by douche tips tend to result ultimately in infection of the cervical glands. Infection of the cervix is almost always, except in little girls, a part of clinical gonorrhea.

Although cervicitis is a local disease it is not without remote or systemic effects. The infected cervix is now considered a focus of infection, with all the significance that that term implies. Cervical infection is frequently accompanied by inflammatory infiltration of the utero-sacral ligaments, with resulting debilitating backache. Cervical cancer is undoubtedly predisposed to by the chronic irritation incident to chronic infection. The discharge resulting from cervicitis is uncomfortable and unsanitary. Finally, cervical infections tend toward sterility and are frequently its sole cause.

Local applications of various antiseptic substances are not curative. These solutions can not possibly reach the depth of the glands where the infection persists. High amputation of the cervix at one time offered the only reasonable assurance of cure. This operation required hospitalization, resulted in stenosis of the uterine opening in a large percentage of cases, and if subsequent pregnancy occurred abortion was the rule. The operation could not be done indiscriminately and when possible it was reserved for women past the childbearing age.

Some years ago Sturmdorf described a technique for coning out the cervical mucosa up to the level of the internal os and covering the denuded canal wall with a sliding graft of external cervical mucosa. This operation represented a great step forward in the treatment of chronic endocervical infection. It is followed infrequently by troublesome stenosis and does not

give rise to abortion in subsequent pregnancies. It does require hospitalization. The technique is somewhat difficult. Post-operative hemorrhage at times spoils the operation, and frequently a few infected glands are left high up within the cervix.

Cervicitis can be treated, and treated successfully in the office. The treatment is ambulatory. It is relatively inexpensive, and in most cases it is more thoroughly efficient and satisfactory than is more elaborate operation.

There are three outstanding types of treatment one may select from. Each has its advocates, who claim for it superiority over the others. At times two may be combined in the same case. Usually it is a matter of personal preference guided by one's experience and equipment.

The first of these methods is repeated linear cauterization, using a small loop cautery. The equipment is inexpensive and the technique is not difficult to learn. The method is more efficient in infected erosions or ectropion of the cervix than it is in high endocervical infections. There are rarely any unpleasant after effects. Its use requires no anesthesia.

The next method is by means of surgical desiccation of the endo-cervical mucosa using one of the special types of cervical electrodes. This requires a diathermy machine. It is very efficient. The technique is not difficult to learn, and it is not dangerous to use if one exercises reasonable care and understands his machine reasonably well. The treatment may be followed by secondary hemorrhage, easily controlled with a vaginal pack. It infrequently results in moderate stenosis, which can readily be overcome with a few gradual dilatations with sounds. Surface anesthesia with cocain or one of the newer anesthetic agents is required. It does not result in dystocia in subsequent pregnancies. The endocervical mucosa with its glands are destroyed by desiccation. The treatment is followed first by a discharge of the destroyed tissue, and then by a relining of the canal by regeneration of the mucosa.

The third method referred to requires still more expensive equipment. It consists in the coning out of the cervical canal with the cutting electrical current, carried on a specially designed wire loop electrode. Surface anesthesia is all that is required. There is no immediate bleeding and seldom any secondary bleeding. The mucosa and its glands are cleanly removed. The canal subsequently becomes relined with new epithelium. There is rarely any resulting stenosis and the method is said to result in no dystocia in labor.

With these three methods of efficiently treating chronic cervical infections readily available women should no longer be deprived of the benefits of treatment. The family physician should look for evidences of these infections. The internist should never fail to examine the cervix. The general surgeon who, in South Carolina, performs the greater number of gynecological operations done, should not forget the cervix when called upon to treat a more obvious lesion of the pelvis.

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- - SOCIETY REPORTS - -

MARLBORO COUNTY MEDICAL SOCIETY ANNUAL NEW YEAR'S MEETING AND BANQUET, HELD FRIDAY AFTERNOON, JANUARY 11, 1935, AT 5:00 O'CLOCK, MASONIC TEMPLE, BENNETTSVILLE, S. C.

Program

1. Address—Dr. William Eggleston, Pres. S. C. Med. Assoc., Hartsville, S. C.
2. Brief Comments on the Lure of Medical History—Dr. Edgar A. Hines, Sec. S. C. Med. Assoc., Seneca, S. C.
3. Allergic Phenomena—A Review of One Hundred Cases—Dr. Foster M. Routh, Columbia, S. C.

Dinner in Banquet Hall

4. Some Present Day Trends in Psychiatry—Dr. Charles F. Williams, Columbia, S. C.
5. The Behavior of the Bladder in Health and Disease—Dr. Austin I. Dodson, Richmond, Va.
6. Self Inflicted Injuries in Civil Practice—Dr. Julian Deryl Hart, Durham, N. C.

Dr. D. D. Strauss, Sec.
Bennettsville, S. C.

SYNOPSIS OF PEDIATRICS, By John Zahorsky, A.B., M. D., F.A.C.P., Prof. of Pediatrics, St. Louis University Medical School. Fabrikoid. Price $4.00. Pp. 359, with 77 illustrations and 6 color plates. St. Louis. C. V. Mosby Company, 1934.

It is not surprising that so excellent a clinician as Dr. Zahorsky, nor that one who has had so much experience in pediatrics, should be able in a small volume of 60 compact chapters to cover the field. The work is of course concise and extremely practical, there being little space allotted to vague theories or abstractions. However, without in any way attempting to compete with the large works or systems, it is sufficiently comprehensive.

If the medical student or the general practitioner is fortunate enough to get into his head most of its contents, it will be very well for his little patients.

The paper is excellent, and the type clear. The heavy black type headings of the paragraphs and the full index permit quick reference.

Doctor Zahorsky and the publishers should be well pleased with their offspring.

R. M. Pollitzer, M.D., F.A.A.P.

ITS QUICK ACTION PREVENTS DEFORMITIES

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- - - BOOK REVIEWS - - -

MOUTH INFECTION. CLINICAL HISTORIES, by Oliver T. Osborne, M.A., M.D., F.A.C.P., Professor of Therapeutics, Emeritus, and formerly Clinical Professor of Medicine, Yale University, New Haven. 1934.

It is significant that such a distinguished Internist should publish a monograph on this subject, for perhaps the general diagnostician has good reason to be impressed in his daily contact with patients of the relation of medicine to dentistry. The author makes a pretty thorough presentation of the whole subject in the one hundred and nineteen pages of the book. The Yale press has done a good job, also. The price of the book is two dollars. The author has very decided views about the tonsil question. He considers the infected tonsil a major menace and its removal a major operation. He pleads for complete enucleation and is not in favor of anything but a strictly surgical procedure. He states frankly that too many tonsils are removed from children meaning that more care should be taken in deciding upon the indications. The author has written extensively on the subject in hand and is a pioneer in fact. He has clear cut ideas about tooth infections just as he has about tonsils. He says every dead tooth is a menace. Many clinical cases are given in the book to substantiate the author's views.

DEFINITE DIAGNOSIS IN GENERAL PRACTICE. by W. L. Kitchens, M.D., with a Foreword by John H. Musser, B.S., M.D., F.A.C.P., Professor of Medicine in The Tulane University of Louisiana School of Medicine. Philadelphia and London, W. B. Saunders Company.

This is one of the most remarkable books recently published. As an index of symptoms it probably has no superior. These symptoms have been summarized for four hundred and seven disease entities. Of these diseases the author states that he has noted five hundred and six symptoms of definite diagnostic value. Upon these common diseases and symptoms the work has been built. The idea is to provide a volume so that the doctor may have a quick reference book at his elbow and again to be of great value in making a differential diagnosis. It is a volume of four hundred and forty three pages. The print is large and easily read. There are blank spaces for the reader to make notes from his own observation.

It is remarkable in how many diseases certain symptoms may be found. Of course pain looms large in a work of this kind and it is an important matter in the practice of every doctor and not always easy to account for. But this book will help tremendously. Take for instance headache. It is amazing when one considers the multitude of diseases in which headache is a prominent feature. Under the head of diseases with symptoms applied there is a wealth of information. Take for instance Aortitis, the symptoms are far more extensive than one may think and thus the condition overlooked. Then, again appendicitis acute and chronic is not always so easy to determine with certainty for here again the symptoms may be quite extensive in distribution. And so it is all through this excellent resume of the busy doctor's practice. The laboratory findings have been carefully orientated without undue emphasis. With the mastery of a book like this, any doctor will find that he rarely needs the highly specialized methods of diagnosis, to point the way, for a solution of his problems.

HOW TO PRACTICE MEDICINE, by Henry W. Kemp, M.D., New York, Paul B. Hoeber, Inc., New York, McMXXXV.

The author from a large experience has a good many practical points to suggest to the young doctor beginning practice. It is a difficult matter, however, to evaluate the customs of the profession in widely separated sections of the country and blaze new trails for the young doctor settling therein, however, there are some basic principles necessary to keep in mind from a practical standpoint regardless of where the young doctor may locate. If he is wise he has acquainted himself with many of these by his contacts with older doctors prior to completing his internship. Books help but the larger school of experience cannot be displaced by the advice of anybody one hundred per cent when it comes to the actual practice of medicine. Many medical schools now undertake to advise their students on economic problems they will face in the practice of modern medicine. Many schools instruct their students in the history of medicine now. Both of these important subjects should long ago have concerned medical schools. Most graduates of Class A schools now are quite well equipped to practice medicine in any community.

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of the
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EDITORIAL

SOME HIGH SPOTS OF THE FLORENCE MEETING, APRIL 23, 24, 25

The eighty-seventh annual meeting offers many attractions to the busy doctor. The Program Committee worked hard to provide a practical program for the general practitioner. The committee abandoned the time honored symposium idea for individual papers of more than ordinary interest. The guests are among the most distinguished medical men in this country. They are all professors in great medical schools —Harvard, Cornell, and Temple University.

The attendance should be large. The Pee Dee doctors are noted for their hospitality, and the Association has never failed to enjoy it.

Woman's Auxiliary

Nearly every state medical society now has an auxiliary. It is agreed that the influence of the doctors' wives lends a charm to our meetings that increases the general attendance.

The Public Health Meeting

For many years the Public Health meeting has grown in importance as well as numbers. Something like one hundred public health workers attend, and an increasing number of our members go early to be present.

Commercial and Scientific Exhibits

Every effort has been made by our exhibitors to keep step with modern medicine. This is a growing feature too every year.

Special Features of This Journal

Aside from the regular write-up of the place of meeting the scientific papers are of considerable interest. It will be recalled that the Association is now sponsoring a Cancer Campaign and much progress has been made. In this issue the paper by Dr. Wellbrock is timely in view of the campaign under way.

The Journal is most fortunate in having avail-

able a report of the Pathological Conferences at the Medical College. These case reports are of such calibre as to challenge the best medical minds in the Association. A good doctor never cesases to be a student, and here is an opportunity that only a few journals offer for close contact with medical education. The article by Dr. Hearin is of special moment, since the Association is taking steps now to lower the maternal morbidity and mortality rate this year.

THE POST GRADUATE OBSTETRICAL COURSES NOW UNDER WAY

We are glad to announce the successful inauguration by the Association of the State-wide obstetrical courses for South Carolina doctors by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia. The places and dates thus far arranged are as follows, also, the schedule of lectures:

Anderson, April 15; Spartanburg, June 24; Columbia, July 8; Orangeburg, July 22; Florence, August 12; Kingstree, August 26; and Charleston, September 9.

WEEKLY SCHEDULE

Moving Picture Demonstrations

Monday, 2 P. M. The Mechanism and Management of Normal Labor.

Tuesday, 2 P. M. The Toxemias of Pregnancy and Chronic Nephritis.

Wednesday, 2 P. M. Puerperal Sepsis and Syphilis and Pregnancy.

Thursday, 2 P. M. Occipito-posterior Presentation, Breech Presentation, Forceps and Versions.

Friday, 2 P. M. Abortions, Placenta Previa and Accidental Separation of the Placenta.

Some Facts About Florence the Place of Meeting

LOCATION AND GROWTH

Florence is strategically located in the very rich Coastal Plain Area of lower South Carolina, known as the Pee Dee Section.

Population in 1900, 4,647; 1910, 7,657—a gain of 65.2 per cent; 1920, 10,968; 1930, 14,774.

Directory estimates 1935, 21,000—a gain of 40 per cent in five years.

For 40 years fastest growing community in the state.

Commission form of government.

Chamber of Commerce, Rotary, Kiwanis and Lions Clubs, City and County Y.M.C.A., Civic League, Park Commission and various women's clubs.

500,000 people live in a radius of 50 miles.

INDUSTRIAL ADVANTAGES

Local cooperation assured.

Hydro-electric power at reasonable rates.

Undeveloped water power available.

Desirable sites at fair prices or low rental in and out of the city.

Unexcelled transportation facilities.

Plenty of labor available with no foreign element.

Social and living conditions unexcelled.

Raw material available:—Cotton—Tobbaco—Hard and Soft Wood.

TRANSPORTATION

Florence is on the main line of the A.C.L. Railway, which has double track.

Florence is on a branch line of the S.A.L. Railway.

Florence has over 50 passenger trains entering and leaving daily, and has over 55 freight trains entering and leaving daily.

Florence has wonderfully advantageous train schedules and shipping facilities.

Florence has 7 branch lines operating and radiating from here.

Florence has the largest freight transfer business in the state.

Florence has bus lines to supplement train service.

Florence is 16 hours from N. Y., 12 hours from Jacksonville, 12 hours from Washington, 11 hours from Atlanta.

FLORENCE FINANCIAL FACTS

Three splendid banks, having combined resources of over three million dollars.

Building and Loan Association.

Two title, trust and investment companies.

Pay-roll of over $350,000 per month.

Postal receipts $55,000 annually.

FLORENCE IS THE HOME OF:

Pee Dee Experimental Station of Clemson College.

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Florence has 22 miles of paved streets.

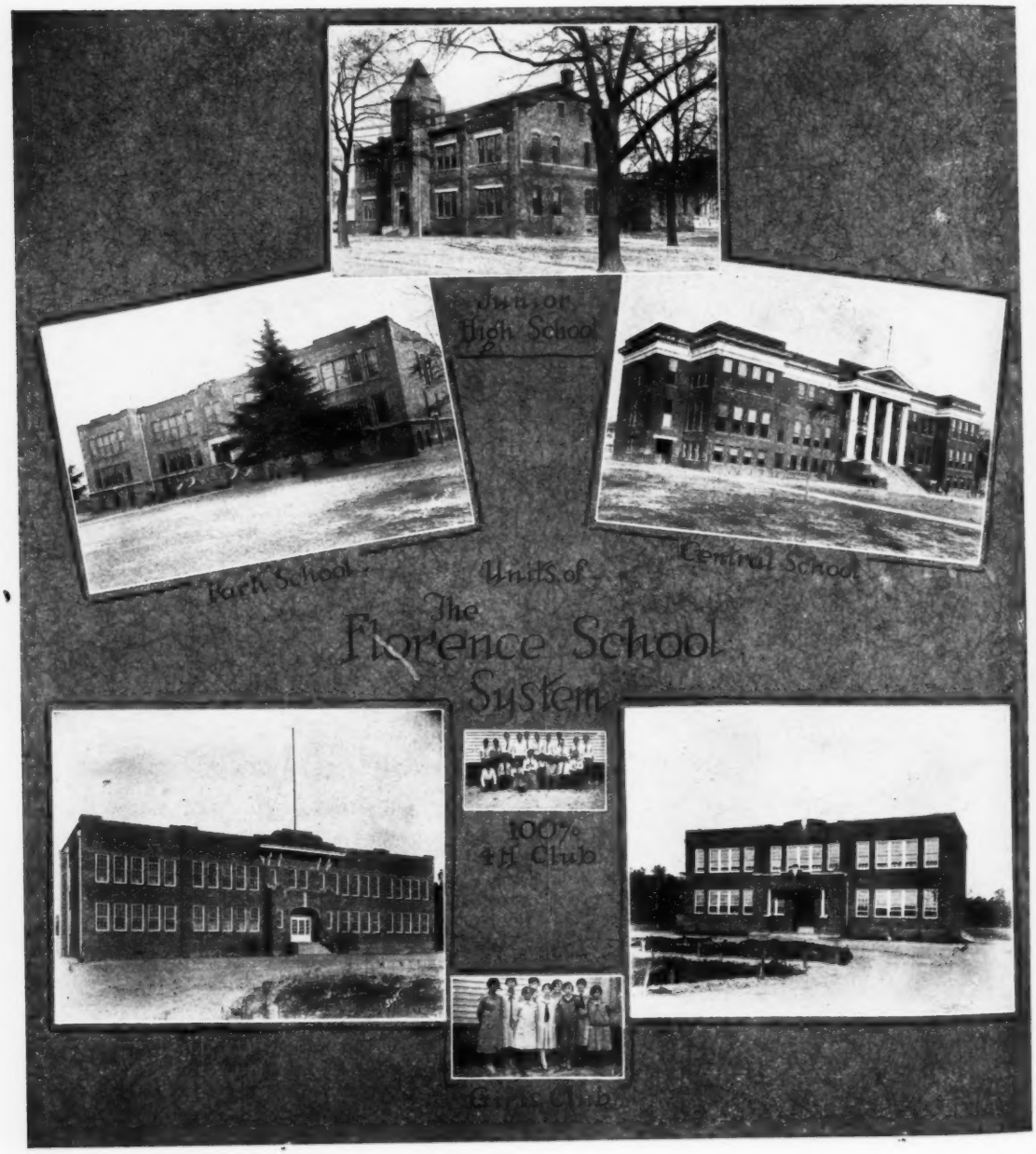
A water supply from deep wells, perfectly pure.

Efficient fire department, composed of paid and volunteer members and equipped with the latest motorized equipment.

40 miles of water mains. 35 miles of sewer.

Thoroughly efficient, adequately paid police department.

Principal streets in business district lighted by White Way, and adequate lighting in residential district. Clean streets and good buildings.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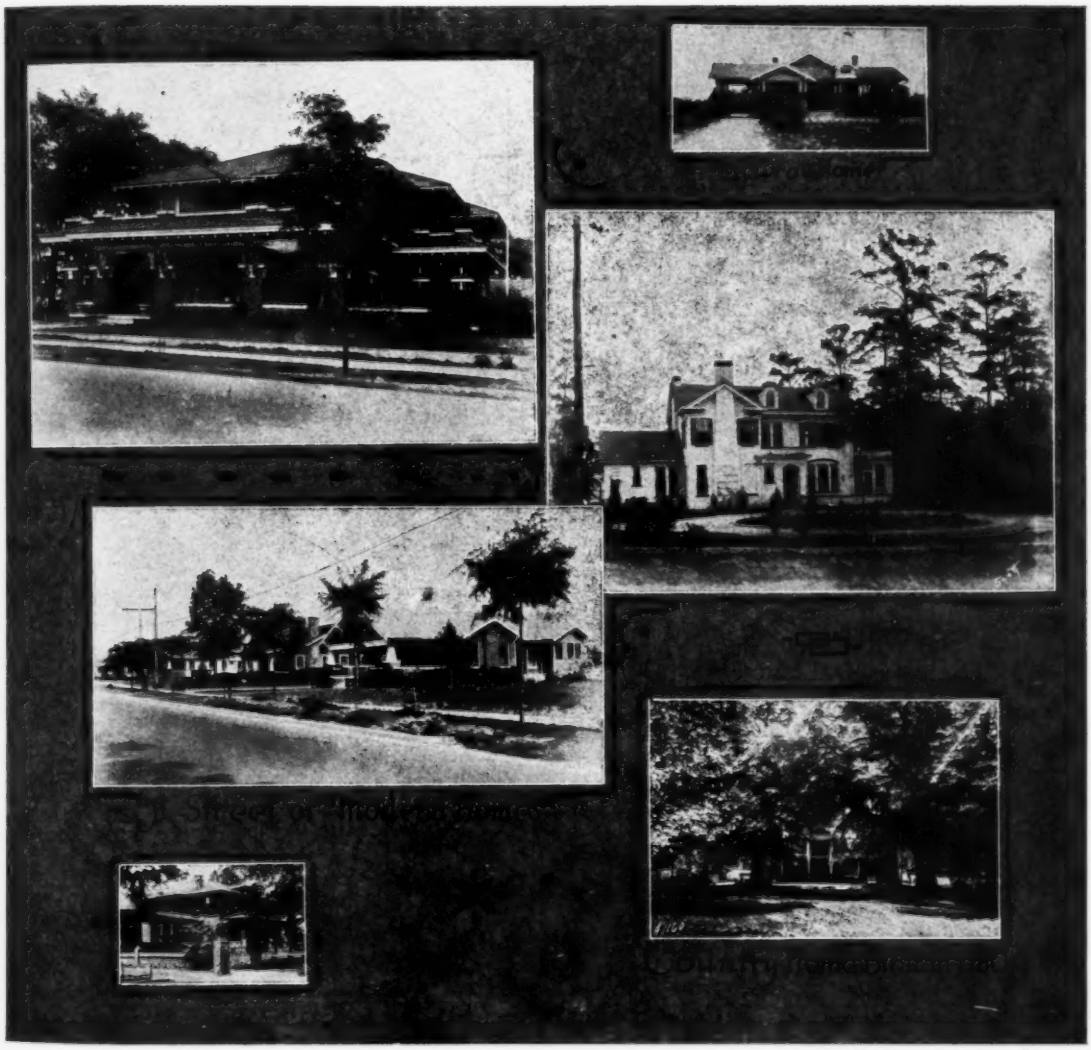


Hospitals of Florence

The McLeod Infirmary has just completed a new three hundred thousand dollar addition making this hospital one of the finest and best equipped in the South Atlantic States.

Members of the Association are invited to inspect this building.

The Saunders Memorial Hospital has sixty five beds and an out patient department and renders splendid service as a general hospital.

The Florence-Darlington Tuberculosis Sanatorium is nearby and has forty one beds.

The Florence Eye, Ear, Nose and Throat Hospital is also well equipped and an important institution of its kind.

The Library

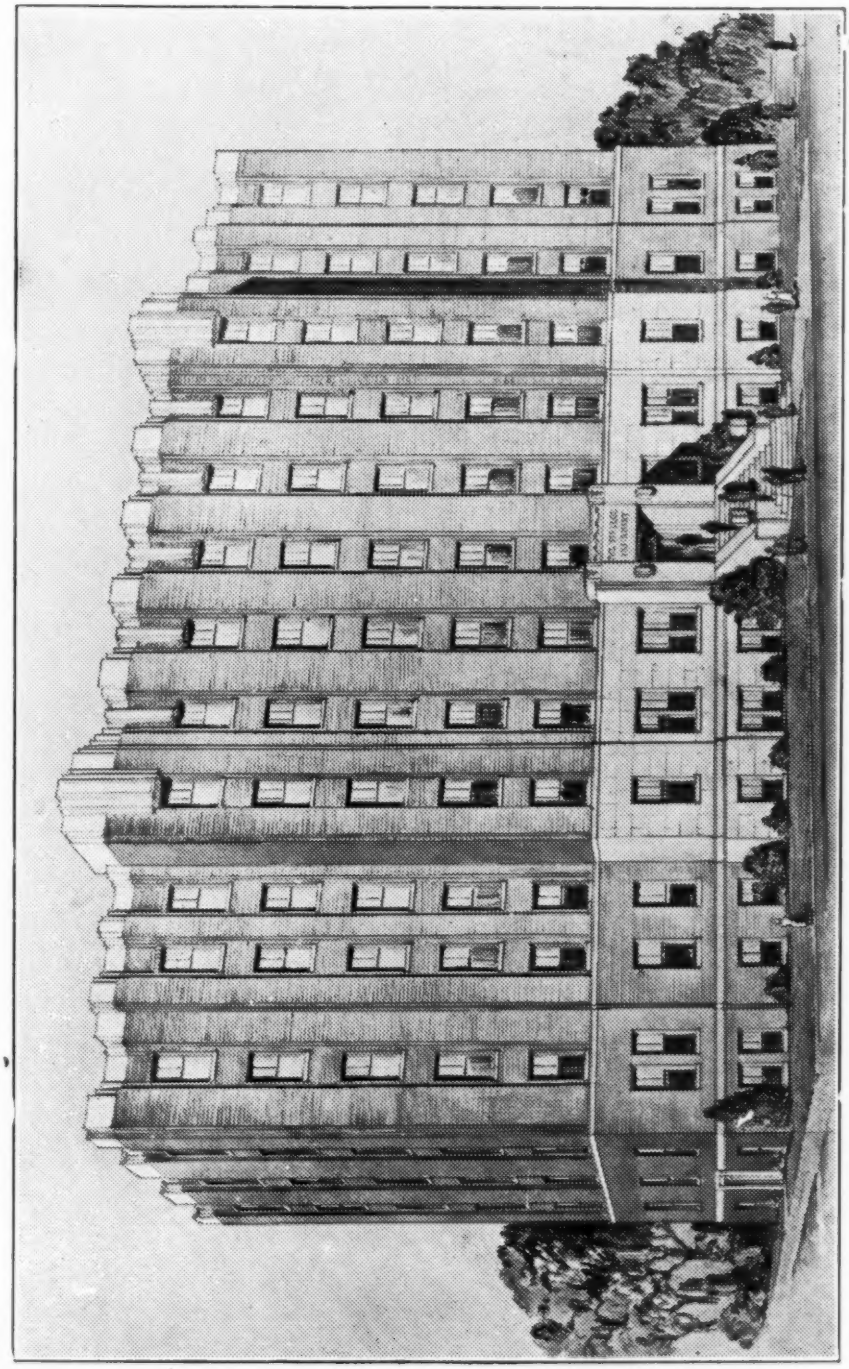
This is one of the unique institutions of the State and the only one built and maintained by local people.

The South Carolina Medical Association will hold its meetings in this building, thus having an inspiring atmosphere for its deliberations, and convenience.

Educational Center

The Florence School System is notable for its efficiency and accomplishments.

THE LIBRARY



THE NEW BUILDING, McLEOD INFIRMARY

ORIGINAL ARTICLES

Clinical and Pathologic Consideration of the More Common Lesions of the Breast

William L. A. Wellbrock, M.D.,
Section on Surgical Pathology,
The Mayo Clinic, Rochester, Minnesota

This paper, which is a general clinical and pathologic discussion of the female breast, is based on a study of more than 600 specimens which have been removed surgically at The Mayo Clinic. Fresh and fixed frozen sections were used.

MASTITIS

The term mastitis is used to describe many physiologic and pathologic mammary conditions other than real infection; true mastitis is comparatively rare. Masquerading under the term "mastitis" are such conditions as mazoplasia (Cheattle) and involutional changes. Mazoplasia is nothing more than a mild dilatation of the ducts which are lined by hyperplastic epithelium. The condition is physiologic rather than pathologic. The breasts usually are painful, and the condition affects women who have not reached the menopause. The involutional changes are the senile breast and the adipose breast, which may be a local, unilateral, or bilateral adipose change, or a part of a general adiposis. Some painful breasts which are classified as mastitis cannot be explained on a physiologic or pathologic basis but may be part of a general psychic or neurotic state, or may be associated with diseases of the ovaries.

Mastitis may be parenchymatous or interstitial. Parenchymatous mastitis may be divided into simple, infectious, and senile. The parenchymatous mastitis that is caused by stasis is the result of irritation from retention of secretion, particularly in lactating breasts. Because stasis favors infection, there is danger of secondary suppuration in this simple mastitis. Stasis also may occur during menstruation. In infectious mastitis, organisms invade the breast; the portal of entry is usually: (1) through the nipple; (2) through the lactiferous ducts; (3) through the lymph channels along these ducts and (4) in rare instances by metastasis.

Infectious parenchymatous mastitis usually occurs during lactation. The epithelium at the ends of the ducts is usually destroyed and this causes a migration of leukocytes, which results in a series of lobulated nodules which are painful. The inflammation may subside, or it may progress and an abscess may form.

Interstitial mastitis is caused by organisms, which enter the breast from the nipple and spread by way of the lymph channels along the ducts into the depths of the interstitial tissue, where they produce cellular infiltration and edema. The glandular parts may be involved secondarily. Resolution may occur or the condition may progress and an abscess may develop.

In chronic mastitis the induration is caused by infiltration of small round cells, and the dilated ducts and acini produce a sort of chronic cystic mastitis. The cysts are usually small, but may be of considerable size, and their contents vary from watery, mucoid, cloudy, cream-like fluid to a caseous, grumose material which is brown or green in color. The epithelium either proliferates or desquamates. The material behind the obstruction of the ducts stagnates and occasionally contains fatty acid crystals. Granulation tissue which contains giant cells, may form in the periphery of an acinus and may be mistaken for tuberculosis.

A cystic mastitis in which there are large numbers of small rounded cysts, frequently develops in one or both breasts. Such a breast feels as if it contained a bag of shot or marbles. Some of the cysts may coalesce and form larger ones. The cystic contents may be greenish and viscid, or they may be serous and bloody if the cyst is isolated.

There are a number of views concerning the origin of this type of cystic mastitis. It may

Submitted for publication, March 16, 1935.

be a chronic mastitis with the formation of cysts. It may be a neoplastic process and therefore is spoken of as cystadenoma and polycystoma because there is a distinct epithelial lining. The cysts may be the result of malformations, which follow embryonal growth, and which are similar to those that produce sebaceous cysts. Peculiar pale epithelial cells, which are occasionally seen, may give some proof to this hypothesis. This form of cystic mastitis should be so designated only when the cysts are as predominant in the macroscopic picture as they are in cystic or polycystic kidneys. The cysts must be differentiated from retention cysts, which include the galactocele.

When lactation is interrupted, involution occurs until the breast is restored to a structure which is composed of ducts and a few acini that contain a number of undifferentiated groups of round cells. There is an increase in the perilobular connective tissue, which may choke the ducts or acini, and which may lead to retention of secretion and the production of small or large cystic structures. This change may be localized or generalized. If it is localized a lump appears, which is difficult to distinguish from a true tumor. Such a structure may remain for many years after the last lactation, without any appreciable change in size. Inflammation may occur secondary to a cystic structure.

Interstitial mastitis is characterized by a diffuse interstitial productive inflammation and a new growth of connective tissue about the ducts, lobules, and acini. When it affects a circumscribed portion of the breast, the condition resembles a true adenofibroma or a fibromatosis but there is not any encapsulation. Exacerbation may occur at menstruation, when the breast becomes painful and the axillary glands enlarge, after which the process subsides and leaves new nodules. After a long time, contraction and sclerosis occur and cause the overlying skin to become rough, adherent, and contracted. Usually, there is an increase in elastic tissue about the acini and ducts. A cyst or a carcinoma may develop in such a breast. In the more acute stage there is a diffuse cellular infiltration and a collection of cells and debris around the acini and in the ducts.

The natural history of the breast includes a terminal stage of atrophy, which usually is spoken of as "senile mastitis." This condition begins at the menopause, continues through life, and is associated with the decline in the nutrition and function of other sexual organs. The breast is greatly reduced in size because of the reduction in fat; the cellular connective tissue becomes fibrous and hyaline, and the lobules of the gland are reduced to a scarcity. During this involutionary process, a dilated acinus or duct may form a small cyst, which usually remains small. In many cases the process is marked by desquamation and proliferation of the lining cells of the ducts, or the cuboidal or low columnar epithelium may produce short outgrowths in the form of papillary projections. This epithelial proliferation in a breast, which is otherwise atrophic, may account for painful breasts, particularly those which affect women who are more than forty years of age. This may occur in one breast or in both.

The common form of productive mastitis or adenofibromatous hyperplasia is marked by the production of small cysts by epithelial proliferation and diffuse increase in fibrous tissue. The prominence of the glandular mastitis and the presence of many cysts has led to the use of the term cystic mastitis. It also is often called Schimmelbusch's disease. The disease usually begins in one breast and then affects the other breast. The onset is slow and painless, and is not recognized until a cyst of large size attracts attention. There may be a serous discharge from the nipple and the nipple may be retracted. The process is usually progressive. The cysts may be small and very numerous, and their contents may be serous, bloody, or inspissated.

The pathologic picture presents a great many abnormalities. There may be nodular thickening about the small ducts. The tissue between the acini is sometimes infiltrated with lymphocytes or plasma cells. A small area of embryonal type of epithelium may be seen in an acinus. The epithelium is usually proliferative and the acini contain two rows of well-developed cells. More pronounced growths produce more abundant cells, which are larger in size and have hyperchromatic nuclei. All the acini and ducts in a lobule may show this

overgrowth, while adjoining lobules are normal or atrophic. When dilated acini or ducts become filled with these large well-nourished cells, which occur in compact masses or form secondary alveoli or ducts, there may be a suspicion of malignancy. Cysts are formed from dilatations of alveoli or ducts, and are lined with clear columnar cells. Many stages of the proliferation of these cells are seen. These may vary from the formation of low papillae and dendritic outgrowths, which are accompanied by stroma, to pronounced papilloma or a papillary adenoma. Malignancy may arise from these changes. Hemorrhage may be associated with malignant changes in the wall of the cyst.

Cysts may develop from the sweat glands in the breast which have a lining of acidophilic columnar epithelium that often is arranged in papillary formation. They may undergo malignant change.

Papilloma

A papilloma is a neoplastic process that occurs within the duct. Papillomas may occur as single or multiple tumors, and frequently are found in both breasts. They are sessile or pedunculate growths. The dilated duct in which the papilloma is growing may be considered as a cyst which is lined by either cuboidal or columnar epithelium, and which in addition contains this papillary process. The tumor is a branched papillary adenomatous growth covered with epithelium which is similar to the epithelium which lines that particular portion of the duct from which it arises. This condition may be likened to the papillary cystadenoma of the ovary. Some of these tumors appear malignant because of their cytologic characteristics, such as large cells with hyperchromatic nucleoli and an occasional mitotic figure. Others appear to become malignant or to have a malignant tendency by invading the wall of the duct and surrounding stroma. Such a papilloma cannot be expressed; the truly benign intraductal papilloma, which is attached by a pedicle, can be expressed. Invasion of the surrounding tissue does occasionally produce the appearance of an extending neoplastic process. This may be similar to the intracystic fibro-adenoma. Papillomas are more often found in the larger ducts near the nipple, but occasionally small ones are found in the periphery of the breast. They are sometimes associated with a diffuse mastitis, with a Schimmelbusch's mastitis, or even with an independent carcinoma.

Adenoma

An adenofibroma or fibro-adenoma is a fibro-epithelial tumor which occurs in the breast as single or multiple tumors, and may be unilateral or bilateral. In the earliest stage it is seen as a small group of acini which are situated within a thickened dense stroma. These have a tendency to form whorls, but are not otherwise sharply circumscribed. Some of these tumors may be primarily adenomas while others may be previously influenced by the behavior of the stroma. Some, therefore, do contain a marked preponderance of the adenomatous element while the fibrous connective tissue element predominates in others. Those which contain a preponderance of the adenomatous component may therefore be designated adeno-fibromas, while those which contain a predominance of fibrous tissue are designated fibro-adenomas. There is a peculiar form of adenofibroma which occasionally affects young girls. The acini contain many layers of epithelium which is less differentiated than that of the usual adeno-fibroma, the stroma is more cellular, and the tumor softer and more vascular. Its growth is more rapid than that of the usual fibroma and it is often regarded as a malignant tumor. It is well circumscribed, lobulated, and may be designated as a fetal fibro-adenoma.

A fibro-adenoma may occur as a very large tumor, which occupies or replaces most of the breast, but more often it is a small, firm, well-encapsulated tumor. The massive diffuse tumor is illustrated in some cases of diffuse hypertrophy of the whole breast which exhibits a neoplastic character. The smaller tumor is firm, lobulated, and freely movable. These tumors usually affect young women. If the connective tissue surrounds the acini in the form of broad bands, the tumor is called peri-canalicular, or if the tumor consists of complex papillary projections into the acini, it is called an intracanalicular fibro-adenoma. The latter is more friable than the former. A fibro-adenoma may become cystic as a result of dilatation of the acini. The cysts may be single or multiple, and their contents may be serous, mucinous, bloody, or fatty. In a fibro-adenoma,

a carcinoma, a sarcoma, or both may arise.

Another fibro-epithelial tumor which occurs rather frequently is the intracystic fibroadenoma. This tumor may sometimes be papillary. It usually appears after the menopause. It is a single or multiple, rounded movable tumor which is situated beneath the nipple. A hemorrhage may occur in this tumor and cause a bloody discharge from the nipple. The structure shows a papillary growth of connective tissue which is covered with epithelium. The epithelial cells are cuboidal or columnar, and in many instances they are arranged in an adenomatous formation. These tumors may be either benign or malignant, depending on the character of the epithelium. These tumors, when malignant, have a low grade of malignancy and metastasize slowly. They usually occur singly but may be multiple. In some forms of mastitis there may be a similar process in which there is a piling up of epithelium in an acinus, which sometimes may form very small glands. Such tumors or tumefactions in some instances are indistinguishable from intraductal papillomas which have slowly invaded the surrounding connective stroma of the breast.

CARCINOMA

Carcinoma of the breast is a common neoplastic disease which manifests itself in many forms. It occurs at any age and affects single as well as married women. It is more often unilateral but is sometimes bilateral.

The causative factors are probably many and are not definitely known. All that can be stated positively is that carcinoma of the breast is found associated with or following, many pathologic conditions, such as the various forms of mastitis, solitary cysts, injury, pregnancy, hypertrophy, atrophy, benign tumors, and foreign bodies. There are several well defined anatomic forms of carcinoma of the breast; the specific features that characterize these forms are distinguished in the early stages, but in the late stages they are often lost and are indistinguishable from others.

Carcinoma may originate in any part of the epithelial structure of the breast and thus, anatomically, may be divided into three groups: that which arises in the squamous epithelium of the nipple; that which arises in the proximal, medial, or terminal portions of the duct, and that which arises in the acinus. In addition, carcinoma may arise in the remnants of the sweat glands near the nipple and in the periphery of the breast.

The papillary adenocarcinoma is one of the most favorable types of carcinoma of the breast. This type of carcinoma arises either from an intraductal papilloma or from a papillary hyperplasia of the epithelium of the duct. Malignant change in either of these two conditions is evidenced by invasion of the surrounding tissue and increase in size to tumor formation. The characteristic histology is the formation of small acini and papillary projections. In a small tumor, hemorrhage may occur and may nearly destroy most of the tumor tissue. This may sometimes cause an error in the diagnosis. These tumors usually grow to considerable size in a cystic condition before they invade surrounding mammary tissue or metastasize to regional lymph nodes. True papillary adenocarcinomas grow slowly and hence metastasize late.

Adenocarcinoma which arises from the ducts may assume many forms. That which arises in the larger ducts nearer the nipple often has a feathery appearance; the cells are large with a clear cytoplasm, the nucleoli are very large and stain deeply. These tumors usually grow rapidly, are often large and soft, and occasionally may ulcerate through on the surface of the breast. Carcinoma which arises from the smaller and more distant portions of a duct takes a tubular form of growth, and attempts to imitate that portion of the duct. The cells are cuboidal or round, depending on the immaturity of the cells and the amount and condition of the stroma. Neoplasms which arise from the terminal ducts assume a still smaller tubular character; sometimes there may be only columnar cells lying in a fibrous hyaline stroma.

Carcinoma which arises from the acinar portion of the epithelium of the breast is usually solid and rather undifferentiated with variations. This type of carcinoma is usually diffuse and may originate in many acini at or about the same time, and hence is often called "multicentric" adenocarcinoma. Sometimes, in this type of carcinoma, the center of the mass breaks down and false acini are produced. The false

lumen which is produced by the necrosis is often rather large and contains a considerable quantity of cellular debris, but the lining still consists of irregular layers of large carcinoma cells. This form of carcinoma is commonly or popularly known as "comedo-carcinoma", and grows more slowly than the ordinary type of adenocarcinoma.

An unusual type of carcinoma of the breast is the mucoid or so-called "colloid" carcinoma. It is a type of carcinoma which, as its name signifies, is composed of crescent shaped cells which have eccentric nuclei and glary whitish cytoplasm. These cells are derived from the epithelium of the duct by a process of more complete differentiation than ordinarily occurs. The onset of this type of carcinoma is rather insidious and diffuse. The growth eventually involves the entire gland-bearing portion of the breast. Before metastasis occurs, the entire breast usually is involved, but this may take several years. The entire organ becomes painlessly enlarged and has a firm uniform rubbery consistency without a definite localized tumor. This form of carcinoma is occasionally bilateral.

One of the most malicious, devastating, and fulminating types of carcinoma is the so-called "inflammatory" carcinoma. It usually affects younger women and grows very rapidly without producing any definite tumefaction. The breast becomes diffusely enlarged and painful. Metastasis occurs early.

Squamous-cell carcinoma, or Paget's disease of the breast, is not a distinct and separate disease. The epithelium of the duct is simply a continuation and transformation of the epithelium of the primitive anlage. In the more external parts of the ducts, the epithelium is continuous with the surrounding areola, while further along the duct it gradually shades into cuboidal and columnar epithelium. Therefore, this disease which originates in the squamous portion, is primarily a squamous-cell carcinoma which may, deeper in the breast, grow into one or more expanded tumors whose cells lose some of their primary squamous-cell characteristics and become cuboidal. The carcinomatous impulse is initiated in the squamous portion and is carried down to include the epithelium of the duct. It is usually the adenocarcinoma or the carcinoma of the ducts, which metastasizes. It must be remembered, however, that two primary concomitant lesions may occur in the same organ.

The onset of Paget's disease is insidious; the condition begins usually in cracks and fissures, which refuse to heal and often secrete a discharge that causes an accompanying eczema of the neighboring areola. There is a sense of deep itching, which is followed by retraction of the nipple and local eczema. A tumor finally is found beneath the nipple. The course is extremely slow and the condition lasts many years. Metastasis is as a rule late.

Clinical Consideration

As stated before, the term mastitis is used for many physiologic and pathologic conditions of the breast, other than real infection. True mastitis is comparatively rare. It is difficult to separate chronic mastitis from chronic cystic mastitis. Benign pathologic conditions of the breast, such as localized or general cysts, hypertrophy, atrophy, and Schimmelbusch's hyperplasia, usually are accompanied by pain, with or without the localized tumefaction.

Diffuse retention of the secretion of the duct causes thickening of the secretion because of the pollution with cellular debris. This is accompanied by peri-ductal and peri-acinous infiltration with lymphocytes and plasma cells. This is often called plasma-cell type of mastitis. The secretion may appear as pus, or, if thicker, it may be putty-like as comedones; this condition is popularly known as comedo-mastitis. Any of these conditions may occur in a small area; in this case, they may be difficult to distinguish from carcinoma. The entire breast is usually very painful. Under some circumstances an area of fat necrosis which is accompanied by pain, may follow an injury.

The patient who has a benign condition of the breast complains of a lump, which usually is painful or tender. There is generalized tenderness or pain in the breast. A discharge from the nipple sometimes may be present; this may be watery, creamy, brownish, or bloody. Schimmelbusch's hyperplasia, especially if papillary, is accompanied by a bloody discharge. An intermittent serous or bloody discharge is a very significant sign of a papilloma. It must be remembered that any breast may contain several benign lesions or benign and malignant

lesions at the same time. A deep solitary cyst may simulate a carcinoma.

Approximately 71 per cent of benign lesions of the breast occur among married women, while approximately 28 per cent of these lesions affect single women. A mastitis seldom affects a girl before menstruation has occurred. Benign lesions occur about equally in each breast; 47 per cent affect the right breast and 53 per cent involve the left breast. Both breasts frequently are involved.

Clinically, carcinoma of the breast is recognized primarily by a firm tumor of variable size, which is either fixed to the underlying or to the subcutaneous tissue and which causes retraction of the skin. The fixation is most significant. Large carcinomas, which are situated near the surface, may ulcerate. Tumors which are within or beneath the nipple sometimes cause the nipple to be inverted. A carcinoma may occur in any portion of the breast, or within the nipple. Bleeding from the nipple occurs in some types of carcinoma. However it must be remembered that there is no absolute sign or symptom in carcinoma of the breast. A freely movable tumor with no fixation may prove to be malignant. On the other hand, a tumor which is fixed may prove to be a deep-seated cyst, a mastitis, or an area of calcification, which may occur in a benign tumor or an area of fat necrosis. The presence of enlarged glands in the axilla may or may not be due to metastasis.

There is only one method of making a positive differential diagnosis of a small tumor of the breast or of a doubtful mass or nodule, and that is by surgical removal and microscopic examination. It is far better to remove the entire tumor than only a small specimen, because of the possible danger of dissemination of malignant cells if a piece is excised, and also because a tumor may be partly benign and partly malignant, as is the case in some cysts and adenofibromas. A tiny carcinoma also may be found in an area of mastitis.

Pain is a variable symptom of carcinoma and usually does not occur until late in the disease. The absence of pain usually is more significant than the presence of pain. A large number of the patients who had carcinoma of the breast complained of one or more of the following symptoms: a sensation of soreness, tenderness, burning, tightness, fullness, dragging, drawing, stabbing, burrowing, or pulsation in the breast; painful enlargement of the breast during the menstrual periods; and pain in the shoulder.

The etiology of carcinoma is not known. There are several theories; the two most plausible ones are the hereditary and the traumatic. It is interesting to note that 28 per cent of the patients who had carcinoma of the breast said that one or more members of their family had had carcinoma. In 5 per cent of the cases of carcinoma of the breast, there was a history of trauma, but the time between the trauma and the appearance of the tumor varied considerably in different cases.

The length of time that the presence of a tumor had been noted is variable. In many instances, tumors are discovered by the physician, during a routine examination when the patient had sought advice for another condition.

When a woman first consults a physician on account of a tumor in her breast, the growth usually is several centimeters in diameter, and there is the history that she first noticed the lump days, weeks, months, or even years before. In the series of cases which comprise this study, the average size of the tumor at the time of operation was 3.48 cm. In 69 per cent of the cases, it was possible to make a positive preoperative diagnosis from the size of the tumor and its concomitant signs and to perform a radical operation without biopsy. In 31 per cent of the cases of carcinoma, the tumor, a portion of the mammary tissue, or the entire breast was removed and examined microscopically, before proceeding with the radical operation. It is possible to draw two deductions from these facts: First, the patient did not seek medical aid until rather late in the course of the disease. This is evidenced by the fact that axillary metastasis was present in over 60 per cent of these cases. Secondly, a certain percentage of these patients sought aid before the usual clinical manifestations of carcinoma of the breast were present. Biopsy was the only means of making a diagnosis in these cases.

Carcinoma may affect one or both breasts. In 46 per cent of the cases of carcinoma of the

breast, the lesion involved the right breast; in 54 per cent of the cases, the left breast was affected. In 5 per cent of the cases, the patient returned at a later date with a carcinoma in the other breast. In 85.6 per cent of the cases the women were married, and in 14.4 per cent of the cases the women were single. The youngest single woman was thirty years of age and the youngest married woman was twenty-three years of age. The oldest single woman was seventy-three years of age and the oldest married woman was seventy-six years of age. The average age of the patients at the time of operation was fifty-one years, and in 62.3 per cent of the cases the patients were between the ages of forty and sixty years.

Clinically, palpable axillary lymph nodes are not always a definite indication that metastasis has occurred. Large firm or hard lmyph nodes, which are somewhat fixed to the surrounding tissues, are rather indicative of malignancy. However, enlarged lymph nodes may occur in the presence of either a simple mastitis or a mastitis which is associated with, or secondary to, a carcinoma of the breast. Large soft lymph glands may be found, on section, to consist of about two-thirds fat and a rim of lymphoid tissue; because of this gross appearance, they have been called "horse-shoe glands". It is difficult to say whether this fat is a replacement or new lymphoid tissue in the making. In the presence of a malignant lesion, moderately enlarged lymph nodes often have a peculiar microscopic appearance. They consist of dilated sinusoids which are filled with endothelial cells and mast cells. These lymph nodes seem to appear to be preparing for an invasion by malignant cells. Carcinomatous infiltration of a lymph node usually begins in the peripheral sinus, which should be examined carefully in searching for metastasis. Such a gland, on gross examination, may not appear to be involved. In regard particularly to axillary nodes in the presence of lesions of the breast, I wish to quote Gulland: "Lyphatic glands are found constantly and normally on slight cause and when the circumstances calling for their appearance have passed away, they as readily disappear to be recalled into existence as need arises.

"All anatomists are familiar with the fact that the lymph glands in the axilla vary immensely in number in different normal individuals and that in pathological states the normal average may be greatly exceeded. Stiles considers that the axillary glands are much increased in number during lactation and that when the mamma returns to the resting condition or when the natural rest of the menopause occurs many of the glands so developed become involuted and transformed into fat. The change begins near the hilus and spreads outwards toward the cortex. This fatty involution is exactly the same process as that with which we are familiar in the thymus, which in the first few years of childhood is a purely adenoid organ, but later becomes more or less completely transformed into fat. In these involuted glands the distribution of lymphatic vessels is preserved unaltered for if a carcinoma appears in the breast these fatty glands again become adenoid. Not only do the glands come and go but the germ centers are equally labile." In a certain number of cases a lump in the axilla, which is particularly tender and painful during menstruation, may prove to be an accessory breast.

In regard to prognosis, there are numerous clinical and pathologic factors to be considered, as is generally known, but the two which are of greatest importance certainly are lymphatic involvement and the degree of cell differentiation. The extent and number of lymph nodes which are involved also are important. It is known, too, that certain situations or organs of the body vary in their predominance for a certain degree of malignancy. In the breast, for instance, 83 per cent of malignant tumors have been graded 3 and 4. The frequency of involvement of the lymph nodes usually is increased in direct ratio to the grade of malignancy; in 90 per cent of the cases in which the lymph nodes were involved, the malignancy of the tumor was graded 4. Likewise, death occurs earlier in those cases in which the grade of malignancy is high. This is particularly true in those cases in which there is involvement of the lymph nodes. In grading a tumor consideration must be given to experience, and to personal equation and evaluation. This accounts for border-line discrepancies.

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Gleanings From 146 Cesarean Sections

By Willard C. Hearin, M.D., Greenville, S. C.

It is indeed a far cry from the cesarean sections of the sixteenth century to the sections of the present day, but there is yet room for improvement in surgical technic but the greatest achievement is to be gained with better obstetrical judgment.

Williams in his text book has very aptly divided the history of cesarean sections into five periods; the first lasting from the earliest times to the beginning of the Sixteenth Century; the second from the year 1500 to 1776; the third beginning with the introduction by Porro of amputating the body of the uterus; the fourth period extending from 1882 to the present time, following the description by Sanger of an accurate technic for suturing the uterine incision; the fifth beginning with 1907, when Frank devised the extraperitoneal technic.

During the first period the operation was done after the death of the mother for the purpose of saving the child, it is improbable that it was done upon the living subject, although some authors believe it was done by uncivilized races at a much earlier date.

The second period begins when the Swiss, Swinegelder operated successfully upon his own wife. This was most probably an ectopic pregnancy and not a cesarean section for history shows that this woman had five spontaneous deliveries following the operation. The first authentic cesarean section performed was in 1610 by Troutman. As he and his followers used no sutures in the uterus, practically all patients died, either from hemorrhage or infection. Lebas in 1769 was the first to employ sutures but they did not come into general use until after Sanger's contribution in 1882.

In the late seventies the mortality in America was more than 50 per cent and in some of the European medical centers the record failed to reveal a single successful operation for the ninety years prior to the advent of the Porro section in 1876. When Porro's technic was later improved by other operators and the cervical stump was covered with peritoneum, it became a very practical operation and was the first great step in reducing the maternal mortality and to the present day it is still the operation of choice when a definite infection is known to exist.

To Sanger belongs the credit for the greatest advance in cesarean sections, for he gave a definite technic for suturing the uterus, and from that date, 1882, there has been a very marked advance and a definite reduction in the mortality tables.

1907 marked the last great period when Frank devised the extraperitoneal operation through the lower uterine segment but due to the faulty technic, drainage had to be maintained with great difficulty. Latzo and many German operators tried with a few modifications to popularize this operation but it remained for Kronig to point the way by demonstrating that it was not necessary to do the operations via the extraperitoneal route, for the chief virtue was to open the lower uterine segment and then cover the wound with visceral peritoneum. Beck and De Lee did most to popularize this operation in America. Today it is the operation of choice by most obstetricians but the general surgeon with but few exceptions continue to do the classical section, in spite of the fact that it is not safe in the presence of infection and should not be done if infection is suspected.

In 1924 Portes described a new type of cesarean section which he claims is particularly adapted to infected cases in which it is important to preserve the uterus; as his method is a two stage operation with a five to six week interval between operations, it has never become popular, however in rare instances it can be of definite value.

The indications for cesarean sections are too many to be enumerated and will vary with the skill or lack of skill of the various operators, for what might be a definite indication for the general surgeon would not be an indication if the same case was in the hands of a skilled obstetrician.

Read before the South Carolina Medical Association, Charleston, S. C., May 2, 1934.

In reviewing my own cases I find that I have erred more often in being too conservative rather than too radical but even so I plead guilty to both charges and without further comments shall let the record speak for itself for I have recently reviewed all of the cesarean sections done in the two general hospitals in Greenville in the past eight years. Of the 146 cases, 131 of which were white and 15 negroes, with an average age of 26 years, the oldest being 45 and the youngest 15 years, 55 were para one, 33 were para two, 11 were para three, 12 were para four, 19 were divided between paras five, six, eight, nine and ten, and the records on five failed to state the parity.

The average post operative days in the hospital were 13.4 days 102 of these patients were not in labor, 41 were in labor and no record in three. The B.O.W. was intact in 126 or 86 per cent of these cases, fourteen were ruptured before operation and six were not recorded.

Only twenty-nine or 20 per cent had vaginal examinations, two of this number had had bag inductions.

The indications for sections were as follows; twenty-five or 17 per cent had contracted pelves, fifty-eight or 41 per cent had toxemia of pregnancy, most of whom had failed to respond to a more conservative treatment, while in many instances the section was chosen for the purpose of sterilization after repeated pregnancies with eclampsia.

Twenty or 14 per cent had placenta previa and I regret to state that many records failed to show the type of placenta previa that existed.

Three had decompensating hearts.

Fifteen had former classical cesarean sections only ten of which had indicated this as a reason for cesarean section.

Four had excessive scar tissue in cervix and vaginal tract.

Two had pulmonary T. B.

One each were sectioned for the following indications; ODP with head not engaged after test of labor, prolonged labor, cardiorenal with marked edema of the vulva, double cervix and septum in vagina and preeclamptic, stenosis of the cervix following amputation and one excessive pain no reason.

Sixty-eight or 47 per cent were classical sections and seventy-eight or 53 per cent were low sections. Twelve different operators performed the 146 sections. Sixty-three or 42.8 per cent were done by one operator, nineteen by one, eighteen by one, twelve each by two, ten by one and the remaining thirteen cases by six operators.

The anesthesia used was as follows; ether 76, local infiltration of novocain 58, gas 5, spinal 4 and the type of anesthesia in two cases was not recorded.

Forty-three patients had morphine within two hours of the birth of the baby.

The 146 mothers gave birth to 151 babies, there being five sets of twins.

There were nine still births and seventeen babies that lived from a few hours to eight days making a gross loss of twenty-six babies or 16.5 per cent. After deducting the 5.9 per cent still births a 10.6 per cent foetal mortality is still a very high rate were it not for the fact that a large percentage of these babies were from toxic mothers and eight of whom were premature but so called corrected mortality tables can be made to look very much as the author chooses so I will not attempt to give a corrected percentage for they are rarely accurate and never convincing.

Only seven cases showed evidence of post operative shock and most of these had placenta previa and great blood loss before admission to hospital.

The morbidity was determined by classifying all cases that had an elevation of temperature of 100.4 or above after the first twenty-four hours as morbid cases.

Eighty-nine or 60.9 per cent were morbid cases for an average of five days, fifty-seven or 39.1 per cent had no morbidity, giving an average of three days for the entire series.

The maternal deaths were six or a mortality rate of 4.1 per cent. Four were white and two colored, giving a mortality rate of 13.3 per cent for colored patients and 3.05 per cent for white patients.

To review briefly the maternal deaths I find four white and two colored patients. The indications for section were eclampsia with contracted pelvis in one. Eclampsia that failed to respond to conservative treatment one. Acute fulminating nephritic toxemia one. Decompensating heart one. Placenta previa one and

one with prolonged labor with no engagement of presenting part. This latter case was probably a case with contracted pelvis or some faulty presentation, but as there was no prenatal record or any evidence that any pelvic measurements had been made the real indication can be only presumptive.

Three of the fatal cases had ether as an anesthetic and three had local infiltration of 1-2 per cent novocain.

Three had classical sections and three had low sections.

The causes of death were infection in four cases and acute urinary suppression in two.

54.1 per cent of all patients had low sections and 45.9 per cent had classical sections giving a mortality of 4.4 per cent for classical sections and 3.8 per cent for low sections. 100 per cent of the deaths from classical sections were due to infection while only one or 33.3 per cent of the low sections died from infection.

The maternal deaths show too many infections and bad surgical judgment in at least one case which had been in labor for forty hours, membranes ruptured for fifteen hours, five vaginal examinations, three of which were made after rupture of membranes. This was a classical section and the patient died from infection; another patient with nephritic toxemia was given general ether anesthesia.

In conclusion I would like to say that we are not satisfied with our mortality rate for it should be lower; but it compares favorably with that of other general hospitals on foetal mortality and better than most general hospitals for maternal mortality, in fact it compares favorably with many of the better maternity hospitals.

DISCUSSION

Dr. J. D. Guess, Greenville:

Let me remind you that I am on the staffs of the hospitals from which these statistics arose, and that I am one of the twelve operators referred to in this discussion. Condemnation will, in a sense, be self-condemnation. I have advocated a hospital requirement of consultation before contemplated cesarean section, just as is required in case of contemplated therapeutic abortion. Had such a rule been in effect in our hospitals, I am convinced that our mortality and morbidity would have been lower. I believe that no two men now permitted to use our operating rooms for major surgery would have agreed to deliver by section a woman already forty hours in labor, with membranes already ruptured fifteen hours, and who had been subjected to many vaginal examinations; and if, because of a living, viable baby and obstructed labor, section should have been agreed upon, I am sure that the section would have been followed by hysterectomy.

One-fifth of the cases in our series had had vaginal examinations, and two had been subjected to efforts at bag induction of labor. The latter certainly, if not the former, it appears to me, should have interdicted section except by the Porro operation.

Statistics that are rapidly accumulating from clinics in various countries appear to surely indicate that the low or transcervical section, as compared with the transfundal, high, or classical operation, is relatively more safe in respect to both immediate morbidity and uterine ruptures in subsequent pregnancies. It is encouraging to note that in our series slightly more than one-half were transcervical.

Indications for cesarean section appear to be becoming more and more individualistic. They frequently appear to depend upon relative obstetrical ability as compared with surgical skill. The facilities for safe surgery surely play an important part. I fear that in many instances they depend upon the relative increase in the collectible fee in the case of section as compared with delivery from below.

During the period covered by this study craniotomy has been done in Greenville, I believe, only three times. When the fetus is dead, relative cephalopelvic disproportion is rarely an indication for section, but rather calls for craniotomy. Nine stillbirths in the series suggest the possibility that craniotomy might have been substituted for section, with consequent benefit to the mother.

I am sorry that the doctor omitted to make any reference to the incidence of delivery by section as compared with total deliveries. I think that this would not have been high, when taken in consideration with the fact that these hospitals are emergency hospitals for a large group of people most of whom have their normal deliveries at home.

I am particularly interested in the statement that 41 per cent of these sections were done for toxemia of pregnancy. If these sections were done in the course of eclampsia, it is my belief that they constituted poor therapy. If, after control of the eclampsia, they were done for other indications warranting section, that is another and highly improbable matter.

I believe that best results come from treatment of eclampsia along conservative lines until controlled, followed by delivery by that method easiest and least dangerous to the mother. In this connection it should be remembered that labor is usually quite easy in these toxemias, while, on the other hand, they are peculiarly susceptible to infection. Fetal mortality in these cases is so high, even when section is done, that that mode of delivery purely in

the interest of the baby does not appear to be warranted. Our gross fetal mortality in this series would appear to substantiate this statement.

The doctor has spent much time in making this interesting study, and I wish personally to thank him for presenting his findings for our information.

Dr. R. L. McCrady, Charleston:

I am connected with the city hospital here, and of course we have occasion to see a number of cases which may need cesarean. I was impressed by the figures the doctor has given. It seems that they do a good many more cesareans than we do. I looked over our records recently; and from the records of the Roper Hospital and the private department of the hospital (Riverside Infirmary) seventy-six cesareans have been done in the last ten years. I think that leans toward conservatism.

About cesarean in toxemias of pregnancy, I believe it has been concluded that that is not the best way. The doctor cited cases in which they had done cesarean in which conservative treatment had been already tried and had failed. Unfortunately, those are the very cases in which it is most risky. If you want to do a cesarean in toxemia of pregnancy, it should be done before other measures have been tried. The nearer you are to convulsions the more dangerous the cesarean.

Referring to consultations, it seems to me if we are going to have a consultation (which, rightly, we should) it should be with an obstetrician; the man who is going to do the cesarean should consult with an obstetrician whether it is the wise thing to do the cesarean or not. I think consultation with men who are not devoting their time to obstetrics, would not, naturally, be as worth while as with one who has made himself familiar with the indications for cesareans.

I feel about cesareans as Dr. McCord did about the treatment of eclampsia, about saving the babies. You who were here yesterday heard him say that when the time comes to treat a woman in convulsions, or on the verge of convulsions, in eclampsia, the time has come not to consider trying to save the baby. Frequently, when we try and save the baby we allow the life of a mother to be lost. I feel the same way sometimes when the time comes to do a cesarean, in a woman who is going to live a long time. We know the possibilities of infection are very great; we can hear the fetal heart, and we say: "Well, I believe I can save the baby; I will try a cesarean." I believe, when the time comes that there is a possibility of losing the mother, we should not consider the baby. In many cases when we resort to cesarean we will lose both mother and baby. It is very difficult to resuscitate the baby. The longer the woman has been under a general anesthetic, the more difficult it is to resuscitate the baby; so, though you endeavor to save the baby in this way, it is not always possible to do so.

As to natural delivery after having a cesarean, a woman is somewhat in jeopardy from the time she has the first cesarean, if she is going to go ahead and have more children. I do not know how you feel about it, but I always have the feeling, when that woman comes back, that she is liable to have trouble. Of course, if the woman has no febrile temperature after delivery, the chances are that the scar is all right, though you cannot see it. If the patient has an elevated temperature after delivery, and has a stormy course, the chances are that the scar is not all right. So, as I say, you do not feel safe for the future; you have put her in the position where she is an unnecessary risk maybe for the rest of her life. That is my personal feeling about that matter. I am not attempting to criticise the doctor about his series of cases, because, as he said, it is something about which each one at present has his opinion.

Just one more word. That is in regard to the low cervical cesarean. I think he is correct about that, and that helps to explain his cumulative showing. Undoubtedly the low cesarean is the safest.

Dr. C. N. Wyatt, Greenville:

It has been my pleasure and privilege to have assisted Dr. Hearin in practically all the sections he has done, and practically all of them have been low cesarean sections. I have had the pleasure (though I do not know whether you could call it a pleasure or not) of delivering one of these patients in her home, after having a section, and there is a doubt in my mind as to whether it is safe or not. This case was a second pregnancy. She had had a section with the first baby, and eclampsia at that time. She had a very uneventful confinement with the second baby; I delivered her in the home with no trouble at all. She got along perfectly well.

In regard to doing sections in eclampsia, I think I can state that the sections were done after conservative treatment was tried in all these cases first. It was only when they did not respond to the conservative treatment that section was done. In practically all these cases local anesthesia was used, using one-half per cent novocain. Of course, it takes longer to give the anesthesia, but the cooperation was very good in practically all. The results were perfectly splendid. I do not recall a single stillbirth that we delivered in any of these cases.

There is no doubt in my mind, with what experience I have had in assisting Dr. Hearin and other operators there on service in two hospitals, that the low cesarean is perfectly safe and that the morbidity is considerably lower than in the classical section. There is no exposure of gut whatsoever, and no spill into the abdominal cavity.

These cases have been very interesting to me, and the paper is extremely interesting. I do think it is very convincing in stating these facts, and I think goes a long way towards settling the question, or, rather, the argument, that has always arisen as to whether we should do the classical section or the

low one. It seems to me the low section, beyond the shadow of a doubt, is the one to do, and I believe it is coming more and more into popularity.

I agree with Dr. Guess that there should be more consultation, particularly among the general surgeons. I do think, as his review shows, if some of these surgeons had had the proper consultation before these cases were undertaken, our mortality would have been better, and certainly our fetal mortality would not have been as high.

Dr. Hearin, closing the discussion:

I appreciate very much the discussion that these gentlemen have given the paper, and I want to concur in Dr. Guess' suggestion that if we had more consultations perhaps we would have fewer sections. As stated in the paper, it was an unusual number of toxic cases that were sectioned. On the other hand, when we compare our mortality with those treated conservatively, our mortality rate would be equally as high, or higher. I know in my own work the mortality has been as high when treated by conservative methods as when these cases were sectioned, because none of them were sectioned, with few exceptions, until after all the conservative methods had been exhausted.

I want to differ with the gentleman on the point of disregarding fetal mortality. I do not think we want to have dead babies. I believe numbers were saved by cesarean that would not have lived otherwise.

As to deliveries after cesarean, I have never found one in which the scar tissue through the lower uterine segment was weakened, in fact, there was no evidence of scar tissue. The tissue seemed to be as firm as the rest.

I think we should always attempt to try conservative methods with our toxic cases, and until further evidence convinces me I am going to continue not to disregard fetal mortality where I think it is safe for the mother.

PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 283, MARCH 1, 1935

Service of Dr. LaRoche

Student Mims (reading):

Negro female, age 20, unemployed domestic, admitted 12-3-34, died 12-16-34. Patient seen intermittently in O.P.D. for several months. On 10-4-34 she was complaining of nervousness, backache and sore mouth. Sclerae yellowish at this time, numerous ulcers in mouth. Blood Wassermann and Kline 4 plus. Given 6 injections of neoarsphenamine between 10-12 and 11-16, totalling 3.3 gms. On admission to hospital complained of pain over heart, dimness of vision. The dimness of vision began soon after treatment was begun, and about one month before admission pain began over precordium. On the day before admission she became unable to walk (?).

Examination: Fairly well developed female, temp. 98.6, pulse 90, resp. 20, B.P. 114-66. Sclerae yellow, pupils equal and react to light. Mouth and pharynx negative except for jaundice. No lymph glands palpated. Lungs clear. Heart: Not enlarged. Rate slow and "somewhat irregular." No murmurs, no thickening of arteries. Tender in right upper abdominal quadrant, no masses felt. Marked weakness in extremities. Patellar, biceps and triceps jerks 3 plus. Sustained ankle clonus bilaterally. Bilateral Babinski. No apparent cranial nerve weakness.

Progress: Temperature, pulse and respirations normal until 12-15 when temp. rose to 100.2, falling to normal and remaining so until death. Pulse 140 for last day, respirations 40-48. Patient became very listless and sluggish in response to questions. 12-14 she became semi-comatose, with eyes open, and jaw moving in chewing motions. Some spasticity of all extremities. Reflexes same as before. Pupils react to light. On 12-15, respirations became rapid and labored, all reflexes absent, patient appeared moribund. Some stiffness of neck, suggestive Kernig. Comatose. No findings on anterior examination of chest. Died 1:10 A. M. 12-16-34.

Eye Consultation (12-5-34, Dr. Townsend): Questionable edema of right optic disc, temporal pallor of left disc. Blood vessels normal.

One line across right macula lutea, several across left.

Laboratory: Urine (12-5) voided, Sp.Gr. 1.009, no albumin, sugar or acetone. Bile positive. Rare pus cell, no blood. On 12-13 bile in urine 4 plus, urobilin negative, urobilinogen normal. Blood (12-5-34): Hb. 70%D, W. B.C. 8000, polys 50 per cent, lymphs 40 per cent, monos 6 per cent, eosinophiles 3 per cent, basophiles 1 per cent. Blood Chemistries (12-6; 12-15; 12-16) Urea N 11, 13, 14. NPN -, 27, -. Sugar 94, 15, 83. Van den bergh (12-6): direct 3 plus, delayed direct 4 plus, quantitative indirect 7.5 mgs. Icterus index 95. 12-13 direct 3 plus, quantitative indirect 4.2 mgs; Rose-Bengal Liver Function test 67 per cent. Icterus index 65. Blood Kolmer negative. On 12-15 total serum protein 7.23 gms., serum albumin 2.52 gms., serum globulin 4 gms. Spinal fluid (12-8-34): slightly yellow, total cells 344, lymphs 93 per cent; polys 7 per cent; globulin 1 plus, sugar "very slight trace." Colloidal gold 4454321000.

Dr. Cannon (conducting): Mr. Matthews, will you discuss this case?

Student Matthews: We have here a known syphilitic patient, although her blood Kolmer is negative on admission, who has jaundice and backache before arsenical treatment is begun. Syphilis may cause many changes in the liver: an acute hepatitis, gumma, fibrous scarring, or a perihepatitis. In addition to this we have the factor of the administration of arsenic. On admission she showed dimness of vision, jaundice, slow and somewhat irregular heart action, and evidence of a generalized toxemia. The positive laboratory findings of an immediately positive van den Bergh, with an increase in the strength of the reaction on later reading, a lowered response to the Rose-Bengal test of liver function, and a high icterus index, all point to severe liver damage. I believe that her liver condition is an acute yellow atrophy on the basis of arsenical poisoning, or possibly a subacute stage of acute yellow atrophy. The neurological findings are suggestive of something in addition to the liver condition, although the toxemia of failing liver function can cause many of these cerebral symptoms, as the weakness, lethargic state, and actual coma. But sustained ankle clonus bilaterally, bilateral Babinski, and exaggerated knee jerks, with the later development of a stiff neck and a positive Kernig's sign, suggest organic disease of the nervous system. The pleocytosis in the spinal fluid, with predominance of lymphoid cells, and a colloidal gold curve of this nature, strongly suggest syphilis of the central nervous system, although the development of the symptoms is rather acute. So I will add syphilitic meningitis to my diagnosis of acute or subacute yellow atrophy of the liver.

Dr. Cannon: Mr. Fouche, can you add anything to the discussion?

Student Fouche: I think that Mr. Matthews has brought out most of the features of the case. I am inclined to believe that there was an active syphilitic hepatitis before the administration of arsenic, and that this drug caused enough further liver damage to give complete failure of liver function. For the cerebral status, I believe that she has had a meningo-vascular syphilis for some time, with a rather acute flare-up terminally, an active syphilitic meningitis.

Dr. Cannon: It seems to me that this case calls for some discussion from the visiting staff. Will anyone volunteer?

Dr. Chamberlain: As has been pointed out, there is doubtless marked impairment of liver function. A point of interest is the question as to the relation of the nervous system symptoms to arsenical therapy; if we knew whether these symptoms were present before treatment was begun, we would have a definite basis for comment. I am not acquainted with the changes that occur in the brain in association with acute yellow atrophy of the liver, but I imagine that they would be necrobiotic cellular changes. But I do not believe that the drug alone could produce the definite pyramidal tract signs, and more especially the pleocytosis in the spinal fluid. I believe that she had syphilis of the nervous system. The prominence of the pyramidal tract changes, without pupillary changes or apparent involvement of the cranial nerves, suggests that the greater involvement is in the spinal cord. The quick appearance of these symptoms and signs, while under intensive treatment, is interesting, and brings up the speculative question of a flare-up of a latent syphilis of the nervous system induced by arsenicals. The findings suggest chiefly a meningomyelitis of some dura-

tion. The colloidal gold curve, bordering as it does between a paretic and a tabetic curve, bears out this impression.

Dr. Johnson: In an interpretation of liver function, it must be remembered that the usual activities of the liver can be carried on with only about 15 per cent of the total liver tissue functioning. The regeneration of liver tissue, with increased activity of viable cells, is also important. The blood chemistries in this case are very interesting in the light of known liver damage. The low blood sugar, 15 mgs at one time, is very significant, as carbohydrate metabolism is severely affected as the liver fails. The nitrogenous elements are higher than would usually be expected in such cases, as the liver plays a very large part in the formation of these end products from the amino acids. The bile pigment is usually increased in the urine and blood in jaundice. That there is no increase in the urobilin or the urobilinogen in this case suggests that there is little if any obstructive factor. The van den Bergh reaction is biphasic, showing both damage to liver cells, and probably some obstruction to the finer biliary radicles. The Rose-Bengal test, somewhat similar to the older bromsulphthalein test, shows a function 67 per cent of the normal. This is not as marked a change as would be expected here. In an estimation of the hemoglobin, it must be remembered that the presence of the bile pigment in the serum will alter the reading; so a red cell count should me done to determine the presence of an anemia.

Dr. Robert Wilson, Jr.: It seems that the question should be raised as to why arsenic was given in the presence of jaundice. I note now that jaundice is recorded at one time on the clinic record, but when she presented herself to the Department of Syphilology, jaundice was not noted. As regards the neurological findings, these were definitely absent when she presented herself at the clinic. Were it not for the pleocytosis of the spinal fluid, I would explain all the cerebral manifestations on a basis of acute yellow atrophy of the liver, even the pyramidal tract signs. However, this cell count in the spinal fluid, with the other changes as noted, makes the diagnosis of syphilis of the nervous system almost incontrovertible. The last recorded blood sugar, 83 mgs., was taken only a short while after giving glucose intravenously, so it can be concluded that a hypoglycemia was still present.

Student King: How do you explain the negative Kolmer on admission?

Dr. Wilson, Jr.: On the basis of intensive treatment.

Dr. Lynch: I have listened with interest to the analysis of this case, especially as regards the manner in which syphilis predisposes to arsenical poisoning. There was no evidence of such being the case here. I am familiar with the syphilitic hepatitis of congenital syphilis, and the gummas of the liver of tertiary syphilis, but an actual diffuse hepatitis of syphilitic origin is quite rare, and I have never seen it at the autopsy table. When acute yellow atrophy of the liver occurs in syphilis without treatment, this does not necessarily mean that syphilis was the cause, as we frequently see acute yellow atrophy of the liver in non-syphilitics without being able to find a cause, and their occurrence together may be merely a coincidence.

This woman had the condition commonly called "acute yellow atrophy of the liver," but a better term for the condition is "acute necrosis of the liver," since, while the liver is smaller than normal, the change is not an atrophy, but a necrosis of the liver cells, and the resulting collapse of the supportive tissue accounts for the diminution in size. If the individual lives long enough, a hyperplasia of the viable liver cells occurs, which, in distinction to the necrotic and collapsed areas, causes that part to be unduly prominent. In this liver (demonstrating autopsy specimen), the red shrivelled portion is the necrotic part; you see it is not yellow at all, but red, again showing that the name is a misnomer, as the color is due to the presence or absence of blood in the collapsed sinuses and supportive framework. This other portion of the liver stands up from the surrounding collapsed portions. It is the normal and hyperplastic functioning tissue, comprising in this case about one-fifth of the total. The yellowish discoloration is due to the large content of bile. This is the appearance of the liver occasionally described as "subacute yellow atrophy." There is no evidence of syphilis to be found in this liver, and we assume that the arsenic which we know the patient received is

the etiological factor, although some medication or factor could have caused such a state.

The kidneys show marked damage to the "secretory" portion of the tubules, the change in these being of a degenerative type.

The immediate factor to cause death here was a massive lobar pneumonia, involving the entire right lung. The small amount of functioning liver tissue which she had was sufficient to permit her to live to get a lobar pneumonia, which tipped the balance.

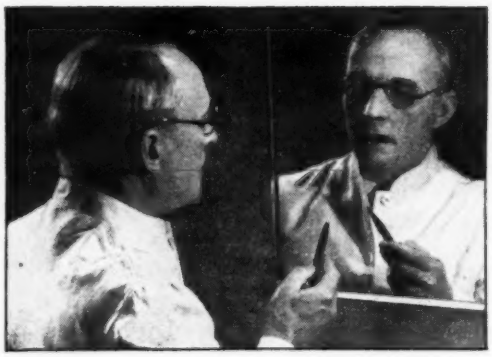
As has been well analysed, she had an active meningo-encephalitis, of syphilitic origin. The cord was not removed and so we cannot speak of that except to say that the same active process that was in the brain was probably in the cord. Whether these syphilitic processes had been stirred up by arsenical therapy cannot be said from our studies.

Dr. Smith: In some cases of secondary syphilis, we see jaundice and enlargement of the liver. What is the nature of this process?

Dr. Lynch: These seldom come to autopsy, and so sufficient cases are not on record to definitely establish the nature of such processes. Of course, jaundice does not necessarily mean liver disease, but when associated with enlargement of the liver, some change is doubtless present.

(Demonstrating microscopic changes by projection) The microscopic appearance of this liver shows large areas of complete necrosis, and a collapse of the supporting tissue. There is considerable blood contained, as you can see here, and that is doubtless the cause of the red color of the gross specimen. Here we see active bile duct proliferation, representing the usual replacement of highly specialized tissues by a lower order of tissue present in the same organ. There is also active proliferation and hyperplasia of the functioning liver tissue, and the cells are large, their nuclei large and unusually active, with occasional mitotic figures to further indicate increased activity.

Please give yourself this good advice, Doctor



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EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

REINFECTION OF THE WOUND FOLLOWING MASTOIDECTOMY

Dr. A. A. Schwartz, N. Y. Arch. Otol., Jan. 1935, p. 71

The desired end-results of a simple mastoidectomy are complete healing of the wound and a dry middle ear. A failure to heal may be due to (1) an incomplete operation; (2) extension or complication of the disease; (3) some constitutional dyscrasia; (4) type of mastoiditis, scarlet fever, in which elements of chronicity are present from the onset, and in which middle ear may never become dry.

The duration of the healing also varies, from ten days to several months. The regrowth of new tissue is sometimes very slow. The process of healing is (1) granulations which are converted into (2) connective tissue, and this is infiltrated with (3) new bone from the periosteum. The amount of new bone formed varies greatly from scarcely any at all, to a completely reproduced cellular mastoid (an instance of which I saw in a patient upon whom I performed a mastoidectomy on the right ear at 3 years of age; the left ear was operated upon at 17 years of age. The right mastoid showed then by X-ray a complete development, looking as if it had never been operated upon). Dr. Schwartz is discussing reinfections that occur after a considerable period and not such as occur before the wound heals. He says that "reinfection of the wound occurs frequently." Its causes are (1) acute otitis; (2) any infection which causes an acute otitis; (3) swelling of the connective tissue in the postoperative cavity blocking drainage and causing retention and reinfection.

The amount of pain, tenderness and swelling depends upon: 1. blockage of drainage, through the aditus, (there was one case in which I used to be able to abort a reinfection by putting adrenalin solution in the ear and by pressure over the mastoid area evacuating the pus); 2. the amount and character of new bone which has been formed; 3, the type of the infection.

In these recurrences the point arises whether a complete mastoidectomy should be performed, especially if the X-ray shows cells whether newly formed or left at the previous operation. There are frequently much symptoms of illness until the pus finds its way subcutaneously and one may find much pus under pressure and diseased granulation in the cavity about the antrum, but they are to be expected and are not of themselves a reason for a new complete operation.

And unless there are signs or symptoms of complications there is no indication for immediate operation, but it is best to allow the pus to localize and point to some extend. (It seems to me that unless you know that neither the dura nor the sinus are exposed by the previous operation you would be taking a risk to wait for several days for localization to occur. This is of course a matter for careful observation.)

It seems, therefore, that those cases of secondary infection in which complete mastoidectomy is needed are extremely rare, even if several reinfections occur. A complete mastoidectomy is indicated only when the original mastoidectomy has been incompletely and inexpertly done.

In one case, age 11 years, he reports there were two recurrences after the dura was exposed on the right side by a previous operation. In the second recurrence there was much pain and unlocalized headache on the side of the exposed dura. The swelling was opened and pus evacuated from a large cavity. But the temperature continued 99-102 with restlessness, headache, chilly sensation and pain in neck. A diagnosis of meningitis sympathetica was made. Lumbar puncture showed a slightly cloudy fluid, reduction of copper, 970 cells per cm., of which 88 per cent were polys. Smear negative for organisms. Culture was contaminated.

Six days later, Feb. 10, there was a right facial palsy peripherally diminished knee jerks, bilateral ankle clonus and rigid neck. Repeated lumbar punctures advised to relieve menin-

geal symptoms. From Feb. 10-17 temperature and clinical course continued same except that the rigidity of neck became less and facial paralysis cleared up. The cells in the spinal fluid varied, being on Feb. 17, 1600 when the temperature also rose to 105 and dropped to normal and stayed normal. At the same time a few colonies of Streptococcus pyogenes-haemolyticus were found.

Four transfusions were given between Feb. 10 and 17 but did not seem to influence the course of the disease.

The sinus and dura which had been exposed widely six years before was covered by a solid layer of bone. (It seems that reinfections sometimes occur in the best regulated families. I saw one this winter in a case operated by an efficient specialist last summer).

The Ridge Medical Society met in Dr. Timmerman's office at seven o'clock Monday evening the eighteenth of February.

We usually have some clinical cases exhibited but didn't this time.

Dr. Wm. B. Timmerman of Johnston read an interesting and instructive paper on nephritis with reports on two cases recently treated by him which was discussed by Drs. T. A. Pitts, D. F. Adcock and O. P. Wise.

Dr. O. B. Mayer read an instructive paper on Undulant Fever and in it spoke of the negroes being so much less liable to contract it than whites. The ratio being about one to twenty.

He also spoke of the people becoming infected from cows and cows from hogs but that people didn't become infected from hogs.

His paper elicited discussion by Drs. Brogden, Asbill, Wise, Ballenger, Pitts and King.

The following were elected delegates to the meeting of the State Medical Association in Florence:

Dr. Wm. B. Timmerman of Johnston for Edgefield County.

Dr. O. P. Wise of Saluda for Saluda County.

Dr. W. W. King of Batesburg for Lexington County.

The delegates were authorized to select their alternates.

Drs. E. P. Taylor of Batesburg and D. B. Frontis of Ridge Spring were appointed to enlist the interest of the dentists of our section in our meetings.

Dr. T. A. Pitts exhibited a number of pictures of cancer in its various stages.

Dr. Byrd reported a case of cancer of the face.

Dr. King reported two cases of cancer of the breast.

Dr. W. P. Timmerman reported one case of cancer of the breast.

Drs. Wise, Asbill and Timmerman discussed the examinations or failures of examinations for cancer.

Supper was served in The Rutland Hotel where short impromptu talks were made by Drs. Asbill, Byrd, Pitts, Mayer and Wise.

The Ladies Auxiliary was entertained by Mrs. W. P. Timmerman.

Dr. W. P. Timmerman attended the meeting of The Tri State Medical Association in Charlotte.

Dr. and Mrs. W. T. Gibson and family of Roper, N. C. and who formerly lived here were here this week to attend the burial of Mrs. Gibson's father, Mr. Henry T. Wright.

W. P. Timmerman, M.D., Secretary.

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J. I. WARING, M.D., CHARLESTON, S. C.

Toxicity of Naturally Occurring Arsenic in Foods—Coulson, E. J., Lynch, K. M., and Remington, R. E., Charleston. Science 80, Sept. 7, 1934.

Arsenic occurs in many articles of diet, especially sea foods. The authors could show no evidence of toxic effect on rats fed on foods high in arsenic content.

The Newer Management of the Diphtheria Carrier—I. S. Barksdale, N. E. Turner and R. L. Bates, Greenville. Sou. M. J. 28, April 1935, 378.

Commenting on the difficulty of clearing up the diphtheria carrier, the authors state that they find bismuth-violet solution most efficacious in ridding the throat of the bacilli.

The Practical Side of Public Health—Leon Banov, Charleston. Sou. M. J. 28, 65, Jan. 1935.

The Chairman's address to the Section on Public Health of the Southern Medical Association. The author stresses the necessity for full time workers, the limitation of the work of a health department to prophylactic measures, freedom from political interference, publicity measures, friendly relations with medical societies, and efficient systems of records.

The Tuberculin Patch Test—J. I. Waring, Charleston. J. of Ped. 6, Feb. 1935, 202.

The test, performed by applying undiluted Old Tuberculin to the unbroken skin, seems to run in close agreement with strongly positive intradermal tests, but according to the figures given here is not comparable with the milder intradermal reactions. A series of 155 tests is reported in detail.

Stephen Elliott—J. H. Hoch, Charleston. Ann. Med. Hist. N. S. 7, Mar. 1935, 164.

An interesting account of the life of this South Carolinian who was distinguished in many fields outside of his favorite botanical activities.

Medicine in Charleston 1750-1775—J. I. Waring, Charleston. Ann. Med. Hist. N. S. 7, Jan. 1935, 19.

A rambling sketch of some of the phases of medicine just before the Revolution, with some account of the more prominent medical figures of the time in Charleston.

Cooling System for Developing Solution—P. D. Hay, Florence. Am. J. Roentg. 33, Feb. 1935, 252.

Detailed description of an apparatus designed by the author for cooling Developing Solution for X-Ray films.

Special Milk in the Solution of the Iodine Deficiency Problem—William Weston. Arch. Ped. 51:683, Nov. 1934.

As a result of many investigations the author believes that iodine deficiency, especially in children, is more prevalent than the presence of goiter would suggest. From other studies it has been shown that the iodine content of foods and water varies widely in different sections of the country and at different seasons of the year. As milk is the most universal food, especially for children, and since it is a particularly good source of iodine, efforts have been made to produce a high iodine dried milk, which has been given to children with excellent results. Better growth, and general health, absence of iodine deficiency, and improved calcium-phosphorus balance have all been observed in infants and children receiving this iodine rich milk, a powdered milk (Dryco) produced in South Carolina. The author points out that the administration of inorganic iodine has not been successful, since the body is able to store only organic iodine in the tissues as a reserve supply.

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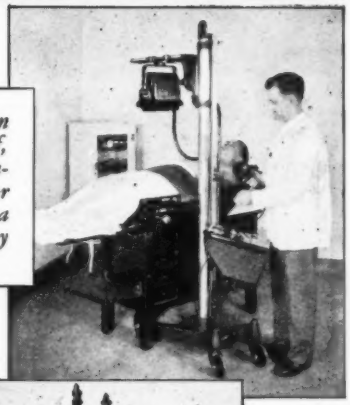

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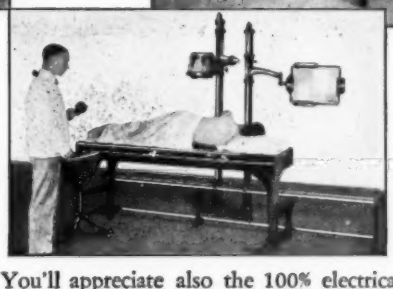

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THE JOURNAL
of the
South Carolina Medical Association

VOLUME XXXI MAY, 1935 NUMBER 4

Cardiovascular Renal Disease in the Negro

By
JACK C. NORRIS, M.D.
Atlanta, Ga.

This study is comprised of 539 necropsies, in which 129 or 23 per cent of the examined hearts were diseased. Arteriosclerosis or syphilis was the offending factor in most of the cases, and of the entire series there were only two streptococcal and two rheumatic hearts.

AGE INCIDENCE

Further analysis of the 129 necropsies revealed the average age of the patients to have been 45 years. The oldest patient was 80, and the youngest 22 years. Twenty-four were between the ages of 60 and 75; twenty-nine between 50 and 60; thirty-three were between the ages of 40 and 50; and thirty-eight were below the age of 40. In considering these figures from an analytical viewpoint, it is noted that the preponderant number of deaths occurring from heart disease, or its effects, is in relatively young people and indicates that as one exceeds the age of 65 it is probable that he may die from other causes.

SEX OCCURRENCE

There were in the group 34 females and 95 males. This indicates that locally heart disease in the negro is almost three times more prevalent in the male than in the female. In attempting to explain this, one may consider various factors more common in the male, as the use of alcohol and tobacco, improper diet, syphilis, arterio-sclerosis, rheumatic fever. Probably more important are the effects of syphilis, arterio-sclerosis, and hard labor. Most of the patients had been laborers.

From the Department of Pathology, Emory University School of Medicine and Grady Hospital.
Read before the South Carolina Medical Association at Charleston May 3, 1934.
Submitted for Publication on April 3, 1935.

BRIEF HISTORY NOTES

A large number of the necropsy protocols had short histories. Forty-six patients complained of shortness of breath; forty, edema of the extremities and abdomen; and twenty-nine had chest pain. The pain was more frequently substernal; occasionally it was referred to the upper abdomen, then to the left shoulder and down the left arm; fifteen patients had the cardiac triad of "shortness of breath, pain and edema." Other complaints were nervousness, nausea and vomiting, failing vision and headaches. The headaches, when described as severe, usually were associated with, or forerunners of, uremia.

GENERAL PATHOLOGY

In considering the hearts individually it was observed that there was a constant uniform enlargement. The protocols repeatedly described the hypertrophied left ventricles', dilated auricles, with dilatation and thinning of the muscles also of the right heart. The hearts averaged 514 grams in weight. The largest heart weighed 1050 grams; forty-nine weighed 500 grams or more; and sixty-nine weighed less than 500 grams. Three hundred and fifty grams was considered the representative heart weight of the normal adult negro male. Grossly the hearts of the hypertensive group were often of a beefy-red color with a firm, resistant feel to the muscle, having also a thickened wall, sometimes measuring as much as 3 cms. in thickness on the left side. Such hearts probably represented strong resistant vessels. In the hearts from older patients the beefy-red color had often faded, and the muscle was softer. The apices were not infrequently

thin-walled, and the peripheral vessels were tortuous. The heart muscle in which fibrosis was extensive, showed scattered, irregular sized, whitish, glistening streaks. Hearts damaged by syphilis were somewhat softened, much less so than the fibrotic types; and there was frequently enlargement of the aorta, dilatation of the mitral cavity, and thinning of the muscular wall.

AORTAS

The aortas were interesting in that 50 of them were described as being atheromatous. Marked atheroma was also noted in 13 and slight in 10. This represents a total of 73 of 129, a percentage of 56. Sixteen aortas were grossly syphilitic. Seven had mixed lesions such as sclerosis and syphilis. Consideration of the figures impressed one with the commonness of atherosclerosis involving the larger arteries and emphasized the caution necessary when giving one's opinion concerning etiology. It seems logical that aortitis be considered the result of atheroma in the majority of the patients. It is to be remembered, however, that climate and age may play an important factor in etiology. Rheumatism may produce an aortitis, and frequently does so in patients living in colder climates. In the young negro, below the age of 40, the process is likely to be syphilitic should he live in an equatorial climate.

ANEURYSMS

Sixteen aneurysms were found in the review. Twelve of the sixteen were syphilitic, seven had ruptured, two had produced tracheal obstruction. Seven of the hearts were not enlarged, and nine were definitely larger than usual. There were only two aneurysms involving the sinuses of valsalva. This emphasizes the interesting, almost equal, possibility concerning the enlargement of the heart as related to aneurysm. It further suggests that syphilis is more likely to be the cause of aneurysm than is arteriosclerosis. In the entire series twelve had degenerative and ulcerative changes of the aortic valves; that makes one feel certain that aortic insufficiency or incompetency had been present during life.

CORONARY FINDINGS AND THROMBOSIS OF VENTRICLES

Ninety-three (93) of the patients had damaged coronary arteries due either to atherosclerosis or syphilis or both. In this group we believe that ten arteries were damaged by syphilis; nine were positively occluded by fibrotic obliteration, calcareous material, or blood clots. Many of the arteriosclerotic vessels were narrowed, tortuous, brittle, and often firm. Throughout the lumen of many vessels there were elevated and depressed areas, yellow in color. It was troublesome to differentiate between the syphilitic and the moderately sclerotic coronary. Narrowing of the coronary ostium, with ulceration, thinning of the arterial wall, and a bluish discoloration is believed to have been caused by syphilis and not by arteriosclerosis; however, the processes were occasionally mixed, and differentiation was difficult.

Ten of the hearts revealed the presence of intramural thromboses. The thrombotic lesions were most often in the ventricular parts of the left heart, usually near the apex of the lateral left wall, and in most instances the muscle of the described areas was thinner because of a prior extension and necrosis. The necrosis was followed by repair, and the adherent layers of the organized thrombotic tissue were of necessity reparative and protective. Occasionally it was observed that thrombosed material had broken away and had produced infarction. Sudden occlusion of the coronary in this group seemed very uncommon, especially when considered in terms of sudden death; however, one cannot help but feel that terminal fibrotic obliteration of the muscle arteries is a common, constant, progressive process. The small areas of necrosis are quickly replaced by fibrous tissue following a temporary inflammatory reaction leading to regeneration and repair. It is quite probable that these patients have vague pains referred to the epigastrium and to the chest wall that are temporary in character and usually disappear with symptomatic treatment and leave little damage. The process reoccurs over a period of years until a large portion of the heart muscle has become infiltrated with fibrous tissue and eventual failure occurs, producing death.

KIDNEY PATHOLOGY

It was found that the average weight of the kidneys was 170 grams. Thirty-eight kidneys weighed less than 150 grams; eighteen weighed 100 grams. Six patients had very small kidneys; and whenever it was observed that the kidneys ranged in weight from 70 to 100 grams, the patients were uremic. The nephritic kidneys as a rule averaged 160 to 175 grams; and the histologic sections would show bizarre changes such as fibrosis of the vessels and the glomeruli, hyalinization, infiltrating cells, and cylinder formation. The kidneys in those groups with syphilis or aortic insufficiency averaged about 150 to 200 grams, though sometimes considerably exceeding that weight. In this connection it was felt that the enlargement was caused by continued passive congestion. Classification of the kidneys was practically impossible. The only logical grouping would be: (a) kidneys with chronic passive congestion and hypertrophy; (b) syphilic kidneys; (c) fibrotic kidneys with moderate thinning of the cortex and with scarring and pitting; (d) the very small kidneys resulting from extreme arteriosclerosis.

SPECIAL PATHOLOGY OF THE AORTA IN SCLEROSIS

The vessel was usually enlarged; the valves stiff and resistant, at times calcific and hard, occasionally open, irregular, sharp and roughened. Beginning at the aortic base a yellowish-white deposition was observed which spread upward to the curvature and descended the vessel. The atheroma at times was infiltrative or degenerative and soft, so much so that the intima and media broke easily. If the calcific changes were marked, the aorta lumen was irregular, tortuous, hard and rough, and in some places "crackled" when pressed upon. The coronaries were usually similarly involved and were often tortuous.

THE AORTA AND MUSCLE IN SYPHILIS

The valves were most often involved at the junctional commissures by a proliferative inflammatory process; and at the points of attachment there were thickening, elevation, swelling and edema. Ulceration had often occurred, and the valves were detached, producing insufficiency. The lesions in the upper aorta were characterized by irregular-sized, elevated swellings with roughening and wrinkling of the intima, which seemed somewhat corrugated and in folds. There were also small pit-like areas of ulceration, contraction, and necrosis. These areas occasionally had a faint porcelain china discoloration. The process was usually described as having been limited to the base of the vessel and localized in a single spot; sometimes the process was diffuse and spread upward near the curvature, where it usually faded out. The coronaries were involved at the ostia, narrowing occurring; and the disease process often spread along the coronary lumen. In the muscle there were seen grayish-white, semi-translucent areas slightly depressed, with or without zones of hyperemia. Gummata were seldom found. Occasionally syphilitic infiltration had spread into the auriculoventricular septum.

THE AORTA IN RHEUMATISM

Rheumatic involvement of the aorta was seldom seen. The lesions most often involved the valves. The edges of the leaflets were enlarged and thickened and seemed rolled and rounded. There was seldom ulceration. The process seemed one of extensive reparative fibrosis with an absence of calcification.

Any of the aortic lesions might have been mixed varieties, and not infrequently atherosclerosis and syphilis were observed together. One may find a similar condition concerning rheumatism and atheroma. Seldom do rheumatism and syphilis appear together.

CAUSES OF DEATH

The cause of death, as determined, revealed that thirty-nine of the patients died from pulmonary congestion; fourteen with myocarditis, as suggested by thinning of the right heart wall, softening of the left heart, dilation of the cavities, and distension of the auricles; eleven died from brain hemorrhage (three of these were within the pontine region); and eight from aortic insufficiency; and eleven from pneumonia; eight patients died from ruptured aneurysms; two from aneurysmal pressure; six because of progressive edema and nephritis; and two from complicating diabetes. Other causes were cerebral syphilis, peritonitis, carcinoma, pleurisy, pellagra, pericarditis, lymphosarcoma, skull

fracture, tuberculosis, ruptured transverse aorta and immediate coronary occlusion, et cetera.

CONCLUSION

1. Twenty-three per cent of the deaths in this study of adult negroes were due to heart disease.

2. The average age of forty-five years indicates the importance of the problem, because these were deaths in comparatively young people.

3. The disease is predominant in the male. Hard labor, arteriosclerosis, and the high incidence of infectious diseases probably play a part in the etiology.

4. The diagnostic cardiac triad was substernal pain, shortness of breath and edema. Headache, severe and persistent, suggested severe kidney disease and indicated uremia.

5. Aortic involvement occurred in more than fifty per cent. Syphilis was a causative factor in a large number.

6. Aneurysm was found in more than ten per cent of the cases. The greater the incidence of syphilis, the more often the occurrence of aneurysm.

7. Coronary affection is practically always present in arteriosclerosis and frequently present in syphilis of the heart and aorta. Occlusions occur in ten per cent with resulting infarction and thrombosis of the ventricle in an equal number.

8. The kidneys seldom escape injury in heart disease. Three main types are simply classified: chronic congested, syphilitic, and moderate and extreme arteriosclerotic.

9. The cause of death in the majority of patients was largely due to congestive heart failure and pulmonary edema.

DISCUSSION

Dr. W. Atmar Smith, Charleston:

I just want to congratulate Dr. Norris for his very interesting paper. I believe if we continue such studies as this we shall get somewhere in finding the cause of the high morbidity and mortality in cardiovascular-renal disease.

There is not much to add to what Dr. Norris has said. I just want to ask him about the frequency of pulmonary arteriosclerosis. I notice that in this series he did not mention any of these cases. Then I should like to ask Dr. Norris what is the mechanism of "worry" in the causation of heart disease.

Dr. J. H. Cannon, Charleston:

I think that any analytical study of pathology is always worth while. Dr. Norris has evidently gone to a great deal of trouble to analyze this series of cases. As has been emphasized, whatever may be the cause of it, certainly our attention has been concentrated on at least an apparent increase in the percentage of deaths from heart disease.

It seems to me that there are two or three points that Dr. Norris mentioned that are worthy of emphasis. In the younger patients in the group the deaths were mostly explainable on the basis of rheumatic disease and syphilis; in the older cases the degenerative, or sclerotic type of disease explained the deaths. An effort to utilize that factor, then, it seems to me is one of the points that confront us in our daily work. He mentioned the large heart, and it has always seemed to me a worth-while thing to bear in mind that if we find in a patient an enlarged heart (and we should always look for it) then we know there is something wrong. A patient can not have an enlarged heart and have a normal heart. He may have a normal-sized heart and yet have heart disease, but if he has an enlarged heart he very definitely has an abnormal heart.

Another thing that it seems to me this study brings home is the large number of cases of fibrosis of the myocardium. I recall reading an article by an Englishman (I have forgotten the name for the moment) a few years ago in which he analyzed a large series of cases. The commonest pathology was hypertrophy and dilatation of the heart and, secondly, fibrosis of the myocardium. It seems to me if we bear in mind in our clinical work these few points, we can apply them to advantage in the practice of medicine.

Dr. Robert Wilson, Charleston:

The increasing incidence of cardiovascular diseases has attracted a great deal of attention in recent years, but I doubt if this increase is as important as is generally believed. We hear of more deaths from the degenerative diseases of middle life than formerly, chiefly because more people reach this period on account of the successful preventive measures which are applied to the diseases of early life. The problem of heart disease probably is no more serious than it always has been. The form of heart disease which constitutes the menace in middle life is merely a phase of disease of the cardiovascular system and the heart is involved secondarily. Consequently if we are to solve the problem of its causation, which obviously must be done before we can discuss rationally its prevention, we must shift the emphasis of our investigation from the heart to the arterial portion of the system.

The commonly assigned causes have little foundation to rest upon. The assumption of the importance of the conditions of our tense modern life loses force in the face of Sir Mark Armand Ruffer's studies of Egyptian mummies; and what can be said of the effect of mental strain when we recall the prevalence

of these diseases among the negroes? Perhaps the basis will be found to be some congenital defect of structure or function transmitted by heredity.

Such pathological studies as presented by Dr. Norris in this very interesting paper are important contributions to our knowledge, but do not clarify the obscure problem of etiology.

Dr. Norris, closing the discussion:

I appreciate very deeply the discussion of this paper. In hearing Dr. Cannon, Dr. Smith and Dr. Wilson talk about this subject I could, without any trouble, recall memories of my student days, and feel that my efforts and interest had been stimulated by my teachers.

Arteriosclerosis of the pulmonary artery has been such an uncommon finding that I have almost gotten to the point where I disregard the pulmonary artery. I may be making a mistake. Of a long number of autopsies which I have performed I have not seen any instance where the pulmonary artery was invaded by syphilis. We do sometimes find a certain amount of arteriosclerosis, but not as often and not as marked as that in the aorta.

As to the mechanism of worry in heart diseases I have not yet reached the stage where I am thinking in terms of etiology except in those specific instances where we find the spirochetes. I do not know the true mechanism, nor how worry seems to have its effect on the cardiovascular system. It is more or less something that has been handed down and spoken of so commonly by those men who have gone before me. I wish that Dr. Wilson had talked fifteen minutes longer and had given us his ideas about the problem.

Dr. Cannon mentioned the point, and I agree with him, that the most common constant finding a physician can go by when he is thinking in terms of heart disease is an enlargement of the heart. That is an unmistakable fact; we have observed it so often until we know we are not in error.

Dr. Wilson spoke along the lines which we are thinking, and that is concerning heart disease *per se*, as to etiology. There are very few primary heart diseases. The heart disease that we commonly speak of is the effect on the organ caused by conditions elsewhere, and the arteries or the arterioles seem to offer a great deal for study. Personally, I am very much impressed with the problem of inherited factors concerning arteriosclerosis.

Brucellosis

By
O. B. MAYER, M.D.
Columbia, S. C.

Brucellosis can no longer be ignored in South Carolina. It has pushed forward as an important public health problem because of its general prevalence and because of the economic loss which it causes. Authorities state that the disease is definitely on the increase; active cases are present, in all probability, in our community at all times. Therefore our attention should be directed to the peculiarities of the disease, its morbidity, spread and control.

Historical: While the disease was known to exist as far back as 1865, it was not until 1886 that it was first proven an entity by Bruce(1). He was a medical officer in the British army, assigned to study the cause of the fever prevalent in the military garrison on the Island of Malta. Apparently he took this occasion to marry and spend his honeymoon on the island. With the aid of his wife he cultured the causative organism from spleens obtained at autopsy from soldiers recently dead from the fever. He called the organism micrococcus melitensis. He carried the study a step farther when he found the organisms present in monkeys which he had injected, twenty-one days earlier. It is strange that although goat's milk was used almost exclusively in the garrison, this animal was not proven to be the host until about twenty years later.

Next on the scene was Doctor B. F. L. Bang(1), a Danish veterinarian, who in 1897 discovered the organism that caused the abortion prevalent in cattle. He gave it the name "Bacillus Abortus," but its pathogenicity to man was not recognized until 1918.

It remained for Miss Alice Evans(2), a native of Pennsylvania, working as an untrained laboratory technician in the Dairy Division of Public Health Laboratory at Washington, in 1917, to show that the cultural and morphological characteristics of the micrococcus melitensis and the bacillus abortus were essentially the same. She demonstrated years later that the different strains reacted similarly serologically.

It is of note that Miss Evans became sick while in the midst of her startling investigation. The sickness began gradually and progressed, making it impossible for her to work. The aching, fever, chills and sweats continued for weeks into months. Finally, when the disease began to wane, she returned to the laboratory, still unaware of the nature of the sickness. A known blood was needed as a control in a certain serological experiment she was setting up in continuing her investigation. To her

utter astonishment the blood agglutinated the Brucella organism and she thus established the diagnosis of her own sickness, when the best of the learned medical profession had failed to recognize it.

The disease is sometimes spoken of as a modern one because of its dramatic unraveling in the twentieth century. So sudden was the unexpected solution thrown upon the world that it required about seven years for the work to be accepted, and the proper recognition given to those concerned.

Hughes(3) gave it the name of undulant fever in 1896 because of the character of its fever. Later the terminology was found inappropriate. It was also known as Malta fever or Mediterranean fever. Miss Evans coined the generic name "Brucella" to represent the group, thus identifying Bruce with the disease. Later she suggested the name "Brucellosis," which is probably a more acceptable term.

The first case in the United States was recognized by Craig in 1904. Keefer of Johns Hopkins, in 1924, probably reported the first proven case bacteriologically and serologically. An epidemic occurred in Arizona in 1913. In 1926, 46 cases were reported in the United States, and in 1932, 1,505 cases. In 1933, 1,787 cases and last year 25 cases were reported in South Carolina. No doubt, every practitioner will have encountered the disease sooner or later.

From information secured from several physicians, it is estimated that at least eight cases occurred in Columbia during 1934. However, only two cases were reported to the State Board of Health. Obviously, physicians are not doing their duty in this respect.

Three strains are generally recognized, the bovine, porcine, and caprine, represented respectively in the cow, the hog, and the goat. Humans may become infected with any strain, but are relatively more immune to the bovine and less to the porcine type. Starr(4).

The incidence of infection among cows is estimated at between 10 per cent and 36 per cent, using as a criterion an agglutination titer 1-80 as positive and 1-40 doubtful. Fitch of the University of Minnesota estimates that about 85 per cent of abortions in cows is due to "B" abortus. Most abortions occur between the 5th and 7th month, but all infected do not abort. In cattle the disease is relatively latent between pregnancies, but becomes active in the uterus during pregnancy. The reappearance of the disease in a tested herd is probably due to the introduction of an infected cow into the herd.

The placenta, amniotic fluid, and vaginal secretions are heavily infected and continue so for about three weeks after abortion. Contaminated forage may become a source of spread. Nursing calves do not show clinical signs even though organisms may be recovered in the feces. The sow does not appear to develop immunity. Hogs and dairy cattle should not be pastured together, for the porcine type is more infectious to humans and is transmissible to the cow.

Most humans possess, in varying degrees, immunity to Brucellosis. Individuals may consume milk from infected herds for a long time without showing signs of the disease. However, if repeatedly large doses of virulent organisms are encountered, or if resistance becomes low from disease or operation, then the immunity may be overcome and clinical symptoms result.

Naturally, risen cream contains many times more organisms than bottom or whole milk. It is believed that the constant use of milk from small dairies is more apt to cause infection, because of the dilution factor. In large herds milk from the same cow does not go to the same individual daily, and the number of organisms ingested varies.

Portal of Entry in Man: There are three routes—by the alimentry tract, through the conjunctiva, and through normal skin or abrasions or cuts. Consumers contract the disease most often by way of the digestive tract from raw contaminated dairy milk or meat. Butchers and attendants of dairy cattle, or slaughter-house employees contract it by direct contact with infected animals, or by rubbing the eye with a contaminated hand. The skin is the most vulnerable and frequent route. The bacteria may pass through normal mucous membrane of the alimentary tract, conjunctiva, or genital tract. The organism then enters the blood or lymph streams, and finally localizes in some organ which acts as a focus.

Incidence in Man: More men than women are infected because men predominate in the care of farm animals and are employed almost

exclusively in slaughter houses. Rural dwellers, butchers, and veterinarians show the highest incidence of infection. Meyers(5) in Nebraska tested 1,000 routine blood specimens submitted for Wassermann and 4.3 per cent were found positive for Brucellosis. Study showed that only 2 per cent of those infected had symptoms. Lasting immunity in man generally follows the first infection. White persons have been found infected ten times as often as the negro. The most common age is from twenty to sixty years, although infants and the aged are found with it.

Incubation: Incubation period unquestionably varies. Miller states it is between five and fifteen days. There are persons who withstand exposure indefinitely and some are found with high titers of agglutination who have never shown clinical signs of the disease. The variation is dependent upon immunological factors of virulence versus resistance.

Symptoms: Probably no other acute infection presents as variable symptomatology. The onset may be mild and gradually pass off relatively unnoticed as in ambulatory cases; again there may be a few weeks of slight aching and not feeling well prior to the actual onset, or it may be ushered in with violent chills and high fever of a septic type, severe headache, drenching sweats, especially at night. In all forms general malaise, aching, and indifference to food are constant. The literature stresses arthralgia and abdominal distress. Neither of these symptoms has been outstanding in the cases under observation. The literature further reports suppurating joints and the similarity to acute rheumatic fever. Instances are also reported where the abdominal symptoms lead to mistake in diagnosis and to eventual operation for an acute appendicitis or gall bladder. The recurring type of the abdominal distress is the differentiating point. A macular or papular skin rash may also be present. The spleen is frequently enlarged, and some times the lymph glands. Abortion in women is rarely due to the Brucella infection.

Originally the fever was described as undulating or appearing in waves, but the disease seems now to have lost this characteristic and is intermittent or septic in type, varying from subnomal temperature to 102 degrees or 104 degrees. Those under my observation have generally shown two peaks of fever in the twenty-four hours—one in the morning and one in the afternoon. Pulse and respiratory rates vary with the fever. The acute stage continues from a few weeks to months, but the disease tends to become chronic and may last for a few years. Accompanying this is weight loss, weakness, and general decline in health.

In the early stages of Brucellosis, patients have been treated for neurasthenia, typhoid, malaria or rheumatic fever, tuberculosis, endocarditis, influenza, and the like. Complications are recorded as follows: Mastitis, oophoritis, orchitis, joint suppuration, and liver abscess. Endocarditis and myocarditis are less common. Mortality is estimated at between 3 per cent and 5 per cent. Autopsy shows spleen, liver and regional lymph nodes frequently harboring live organisms, which may also be found in the mammary gland and the genital tract; diseased gall bladder and appendices may be focuses.

The following brief case synopses are given to emphasize the varying symptomatology:

(1) A white male, age 53 years, had general malaise and headache of two weeks duration, for which an infected tooth was extracted. A few days later chills and fever developed. A secondary blood stream infection was diagnosed. When seen, the temperature curve suggested a Brucella infection. The agglutination test was positive.

(2) A white male, age 10 years, developed tonsillitis and an upper respiratory infection. Slight fever persisted for weeks. Tonsillectomy failed to influence the fever. Later a positive agglutination test was obtained.

(3) A white male, age 40 years, a proven case of Brucellosis, developed glands of the left neck, which continued for weeks. Upon incision pus containing the organism was found.

(4) Several other cases were being treated for malaria.

Laboratory Findings: Blood picture—leukocytes may be normal or slightly increased or decreased. The relative or absolute in polymorphonuclear cells is considered significant when present. A secondary anemia is constant. A positive blood culture establishes the diagnosis, but is obtained in only 25 per cent of the cases. Diagnosis is ordinarily accepted when agglutination occurs in dilution 1-80 and considered partial in 1-40. The test is not infallible. During non-specific febrile attacks a

low or partial agglutination may be negative or uncertain. It is rarely present before the seventh or tenth day, and it may be weeks before showing. The titer goes up with the height of the disease, reaching a peak about the fourth week. The different strains react essentially alike for agglutination. The reaction may remain positive from six to twelve months, or longer. Intradermal tests are often positive before the agglutination tests, but are less reliable. The diagnosis is then made by correlating the history and the physical and laboratory findings.

Treatment: Bed rest, nourishing foods, fresh air and symptomatic relief is the routine. Generally speaking, serums and vaccines have been disappointing. Recently Foshay has produced a serum that has promise. He has also made a vaccine that has given good results in the chronic cases. Serum is not considered of benefit if the disease has continued for four months. Five cases treated by Foshay's method all responded in a satisfactory manner; when similar cases are encountered, the same procedure will be followed.

Prevention of the disease is more easily accomplished than the cure. Pasteurization of the milk is quite effective in rendering infected milk harmless. During epidemics all milk should be so treated and, likewise, all milk that is used from infected animals. The control of diseased herds meets with difficulties. The owner may have his herd tested and the infected cattle removed, only to find, on retesting a few weeks later, that others are infected. Contaminated forage is an ever present or ready source of spread; likewise is the introduction of new cattle into a herd. Latent infections become active during pregnancy, so that many factors make it hard to prevent infection. Nevertheless, intelligent effort and frequent agglutination tests can do much to stamp out the disease.

Unless the public realizes the economic loss the disease brings on the infected individuals, and the dangerous increase of the disease, their demand for control and supervision of dairy herds will not be sufficient to bring action from the boards of health. The doctors can be of inestimable help in pointing out the needs and dangers to the public. Then an informed public can demand of the law-makers better protection from the disease.

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FOR SALE

Operating Table, Instrument Cases and Instruments, Ophthalmos Cap, Laboratory Blood Analysis Set, Diathermy Machine, Infra Red Indirect Lamp, Hanover Alpine Lamp, Tonsillectomy Outfit, Roller top Desk, Reception Room Suite, Microscope, Fluorscope, Electric Sterilizer.

Apply to *Mrs. R. R. Walter,* Laurens, S. C.

PRESIDENT'S ADDRESS

By
DR. S. E. HARMON
Columbia, S. C.

Organized medicine is confronted at this time with many serious complex problems. Ever since I read and studied the report from the divided committee on medical care for the American people that cost one million dollars and five years of activity and work, I have strongly suspected an Italian stiletto in the dark, fundamentally being handled by a political hands and unless the organized medical profession build up a strong coffer-dam of protection around our ideal and efficient system of the study and practice of medicine for the protection of our nation, it will be very much impaired. The politicians of this country are making such a massive, active, insidious, stealthy march upon the medical profession, that I am thoroughly convinced that we will very soon find ourselves in the same predicament of a small company in camp in the time of war, quietly asleep in their tents while the enemy steals through the darkness of the night, unobserved, coming from every direction, and when the little company awakes in the morning, they find themselves surrounded by such overwhelming numbers, with all the machinery of destruction at their command, that they are doomed.

For these and many other obvious reasons, I would ask for the good will and a hundred per cent active support of this entire Association for a greater constructive, organized medical profession. I am deeply conscious of my limitations to cope with the many mighty responsibilities and need the hearty cooperation and support of every member in the medical profession who stands for honest, constructive efficient medicine for the protection of all.

It is my sincere desire that this coming year shall be filled with peace and harmony in every way. But if any latent element smouldering beneath the surface becomes active, we think it is far better and more productive of good to have an open frank, free discussion and understanding of the truth of all problems, than to continue any smothering compromise dissatisfaction. We may not always agree, which does not necessarily imply a lack of trust and confidence, but an understanding in principles to our good for progress.

If we expect and desire the South Carolina Medical Association to continue to stand for truth and efficiency, we need and must have the assistance and cooperation of every member of organized medicine to assist in causing every doctor in the State who is *eligible* to become an active member of organized medicine. Membership in the State, National and International societies is dependent upon the membership of the county or local societies.

In the December number of the Journal of the South Carolina Medical Association, we find our Secretary quoting Dr. W. J. Mayo, one of the deans of the medical profession in this country and in the world, a man with a master mind speaking before his county medical society November 7th, 1934, following the remarks of Mr. George B. Larson, field representative of the Minnesota State Medical Association, who said: "As I look back on somewhat more than fifty years in the practice of medicine, I recall that my father, a practitioner of medicine, taught my brother and me what relationship we as members of a great profession should hold to the county and state medical societies and to the American Medical Association. He said where the American Medical Association leads I follow because I take it that its officers have done more investigation as to what is right and what should be done in the circumstances with it than I have done." That is equally true of our state and county medical societies. Our county societies of which the Olmsted, Houston, Fillmore and Dodge county societies are a fine example, are a great improvement over the old time county societies because no longer obliged to contend with horse and buggy and muddy roads which made frequent meetings impossible, the doctors have become acquainted with each other and can act as a unit. Mr. Larson has stressed tonight the necessity for the profession to do its best in this time of depression to perform its duty to the patient regardless of whether or not it is satis-

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Read before the South Carolina Medical Association at Florence, S. C., April 24, 1935.

Note: I want it understood that this is not all original. A fair part is correlated ideas of others that I have read. S.E.H.

fied with all rules and regulations that the government commissions, more or less political in origin, have imposed upon us." I am sure what Dr. Mayo said to his local society applies to ours and therefore I ask that we accept it to ourselves and apply the same principles in our every day activities.

What has organized medicine to offer in return to its members? Being a member of organized medicine is evidence of the individual doctor's intention to affiliate himself with progressive medicine. It is proof that he wants to maintain and uphold the good standing of our profession, the greatest and most noble of all. It affords constant contact and support of fellow practitioners. It assists in establishing our professional standing. Regular attendance at meetings of medical societies keeps all in touch with the latest advancements in medical science.

Through the membership of our members in the state, national and international societies, little progress in medicine can occur without some member almost at the next meeting, bringing it first hand to the attention of our local society which affords opportunity for presenting scientific subjects in the form of papers and discussion, which disseminates truth to all.

Organized medicine must survive. Individually we can do very little; organically we can accomplish much in many ways even though we may be in the minority. Actively striving for truth, we can accomplish anything possible that is constructive and right.

REPORT OF THE TREASURER

Seneca, S. C.
April 20, 1935

Dr. E. A. Hines, Sec.-Editor
South Carolina Medical Association,
Seneca, S. C.
Dear Sir:

At your request I have audited the books of the South Carolina Medical Association and the Journal of the South Carolina Medical Association. You will find hereto attached a statement of receipts and disbursements with certificates supporting the balances reported.

A substantial gain is shown in both membership and dues and advertising over the previous year. Your attention is also called to dividends on deposits in the Seneca Bank of 5 per cent of original balances, bringing the total dividends to 55 per cent.

Yours truly,
Frances R. Richardson,
Auditor.

April 20th, 1935.

Dr. E. A. Hines,
Seneca, S. C.
Dear Sir:

This is to certify that at the close of business on December 31, 1934, there was on deposit in this bank to the credit of:

E. A. Hines, Treas. SCMA	$544.74
Journal SCMA	851.76

We also certify that according to the records of the closed Seneca Bank the amount of the unpaid balances are as follows:

E. A. Hines, Treas. SCMA	$269.34
Journal SCMA	470.01
Journal SCMA (Time Cft)	451.48

Very truly yours,
C. V. Stribling, Manager.

STATEMENT OF RECEIPTS AND DISBURSEMENTS, SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1934

RECEIPTS

Balance in banks Jan. 1, 1934		
Defunct Seneca Bank	$ 299.27	
S. C. State Bank	247.36	
Postal Savings	1,000.00	$1,546.63
Membership Dues		1,854.00
		3,400.63

DISBURSEMENTS

Salaries		810.00
Office Expense		47.90
Traveling Expenses Sec.-Editor		134.51
Expenses two delegates A.M.A.		160.00
Expenses Official Stenographer of Convention		80.89
Printing		350.00
Sundries		37.78
Balance in Banks Dec. 31, 1934		
Defunct Seneca Bank	269.34	
S. C. National Bank	510.21	
Postal Savings	1,000.00	
		1,779.55
		3,400.63

STATEMENT OF RECEIPTS AND DISBURSEMENTS JOURNAL SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1934

RECEIPTS

Balance in Banks Jan. 1, 1934		
Defunct Seneca Bank	$1,023.89	
S. C. State Bank	382.34	
		1,406.23
Cash on hand		200.00
Subscriptions		1,236.00
Advertising		1,662.96
Refund on check in closed bank		5.00
		4,510.19

DISBURSEMENTS

Salaries		1,328.00
Printing		1,310.00
Office Expense		27.94
Annual Audit		25.00
Sundries		46.00
Balance in Banks Dec. 31, 1934		
Defunct Seneca Bank	921.49	
S. C. National Bank	851.76	
		1,773.25
		4,510.19

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION AND JOURNAL OF SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1934

RECEIPTS

Balance in Banks Jan. 1, 1934		
Defunct Seneca Bank	$1,323.16	
S. C. State Bank	629.70	
Postal Savings	1,000.00	
		$2,952.86
Cash on hand		200.00
Advertising		1,662.96
Subscriptions		1,236.00
Membership Dues		1,854.00
Refund on check in closed bank		5.00
		7,910.82

DISBURSEMENTS

Salaries		$2,138.00
Printing		1,660.00
Office Expense		75.84
Traveling Expenses—Sec.-Editor		134.51
Expenses two delegates American Medical Association		160.00
Expenses Official Stenographer Convention		80.89
Annual Audit		25.00
Sundries		83.78
Balance in Banks Dec. 31, 1934		
Defunct Seneca Bank	1,190.83	
S. C. National Bank	1,361.97	
Postal Savings	1,000.00	
		3,552.80
		7,910.82

Assets of Dec. 31, 1934

Cash in Banks and Postal Savings	3,552.80
Furniture and Fixtures	724.77
	4,277.57

Liabilities as of Dec. 31, 1934

Due E. A. Hines on Salary 1934	512.20

LIST OF MEMBERS BY COUNTIES, 1934

	Paid	*Hon.*
Anderson	36	4
Aiken	4	
Abbeville	6	3
Bamberg	4	
Berkeley	8	
Columbia	85	15
Charleston	84	8
Cherokee	7	2
Chester	8	5
Chesterfield	9	
Colleton	9	
Dillon	6	
Dorchester	5	
Darlington	10	
Edisto	3	
Fairfield	2	
Greenville	73	9
Greenwood	23	
Georgetown	1	
Kershaw	15	6
Laurens	9	
Lancaster	5	
Marion	7	
Newberry	20	1
Oconee	7	4
Orangeburg	27	
Pickens	9	
Ridge	6	
Spartanburg	55	2
Savannah Valley	5	
Sumter	18	6
Union	11	2
Williamsburg	9	
York	23	4
	618	71
Honorary Fellows	71	
Total Membership	689	

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OF THE
South Carolina Medical Association

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MAY 1935

THE FLORENCE MEETING LARGELY ATTENDED

The Eighty Seventh Annual meeting of the South Carolina Medical Association goes down in history as a marked success from every standpoint. The attendance was well beyond four hundred. The decision of the Scientific Committee to limit the program to about fifteen papers exclusive of invited guests met with the approval of everybody and the session on the last day closed as was timed.

One of the special features stressed by the Scientific Committee was that of the invited guests. This year it was decided to bring three distinguished visitors instead of two as usually is the case. All of them were outstanding men in their several specialties and they presented dynamic messages to South Carolina medical men.

The social features at the Florence meeting while of an informal nature were in every way enjoyable.

The Woman's Auxiliary had a splendid meeting as did the South Carolina Public Health Association. These two organizations alone brought more than a hundred people to Florence.

THE POST GRADUATE OBSTETRIC COURSES

The first course given by Dr. J. R. McCord, Professor of Obstetrics at Emory University, at Anderson, S. C., April 15 to 19 exceeded expectations. Something like one hundred men from the nearby counties received this instruction. Every one of them went away with enthusiastic comments on the highly practical nature of the instruction given by Dr. McCord. These courses will continue throughout the state during the summer. The next one will be held in Spartanburg the latter part of June.

THE A. M. A. MEETS AT ATLANTIC CITY, JUNE 10 TO 14

South Carolina rarely fails to have its largest attendance of any place in America when the A. M. A. meets at Atlantic City. We bespeak with all earnestness a similar record for members of the South Carolina Medical Association this year. The programs of the various sections of the A. M. A. as well as the general meetings are of unusual interest. There is another reason: We meet this year jointly with the profession of the great country to the North of us, Canada. It will be an unusual opportunity to enjoy the good fellowship of the officers and members of the Canadian Medical Association. It is debatable whether or not attending a medical meeting ever takes the place of a real vacation for the busy doctor. If one undertakes to comprehend all of the activities of the A. M. A. he will be a much overworked

individual. This year, however, the doctor may enjoy a pretty fair vacation and at the same time profit by the scientific spread at his command.

DR. R. C. BRUCE PRESIDENT ELECT

The elevation of Dr. Bruce from Councilor of the Fourth District to President Elect of the South Carolina Medical Association is an honor most worthily bestowed. Dr. Bruce has served the South Carolina Medical Association on the Council since 1927. During this period American Medicine has passed through epoch making changes, especially along economic lines and the Councilor bodies of the various constituent State Associations have borne tremendous responsibilities and The Council of the South Carolina Medical Association is no exception. Fortunate it is that men like Dr. Bruce are still to be found who are willing to assume these responsibilities and give of their time and energy to the limit of their abilities. The Fourth District is one of the most populous districts in the South medically speaking and the Councilor of such a District enjoys a large experience in the problems of organized medicine. As a result of this splendid service Dr. Bruce is peculiarly fitted to fill the office to which he has been called. Dr. Bruce is a native of Kershaw County, South Carolina born in 1877. He is a graduate of the Citadel, The Military College of South Carolina, receiving his degree in 1900. He is a graduate of the Medical Department of Vanderbilt University in 1910. For many years Dr. Bruce has been President of the City Board of Health of Greenville, one of the outstanding cities from the health standpoint in the United States. Dr. Bruce is a general practitioner.

PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 285, MARCH 1, 1935

Student Barr (reading) Service of Dr. Waring.

White female, age 10 yrs., schoolgirl, admitted 5-8-34, discharged 5-24-34; readmitted 10-25-34, died 11-29-34.

On the first admission there was deformity of fingers, wrists, ankles and knees. Soft nodules were noted about ankles. Spleen was palpable. Her tonsils were removed during that admission. Diagnosis: Multiple Infectious Arthritis.

History (from Mother): Child was well until 3 yrs. before admission, when swelling of the joints was first noted. The process went from one joint to another. The joints were not painful. Mother said that child had never been well since, the joints swelling at frequent intervals. Two months before admission albumin and blood were present in the urine, and blood has been noted frequently since. Continuous fever (duration not stated), with night sweats. Gradual weight loss. Abscesses in ears opened by family physician one week before admission.

Physical: Temp. 101.6, pulse 126, resp. 28, B.P. 120/80. A pale underdeveloped child. subcutaneous nodules noted on inner side of great toe and along some tendons. Profuse discharge from left ear, slight from right. Teeth carious. Chest small and thin, expansion limited. No abnormal findings. Heart: Apex in 5th interspace in anterior axillary line, enlarged to percussion. Rate rapid, impulses equal in rhythm and force. No murmurs heard. Abdomen: Liver palpable and tender. Spleen palpable as far down as umbilicus. Definite deformity with nodules on joints of toes and hands, fingers partially flexed. Knees and elbows deformed.

Lab: Urine (10/26; 11/12): Sp. Gr. 1013, NSQ; Albumin 2+, 4+, sugar, acetone, pus and blood neg.; Casts, occasional hyaline. Blood (10/26, 10/30, 11/23): Hb. 52%, -, 50% (D); RBC -, 2,500,000, -; WBC 6,200, -, 6,950; polys 61%, -, 60%; lymphs 28%, -, 44% (?); monos 10%, -, 6%; achromia 2+. Thick and thin smear for Plasmodia 10/26) neg.

Feces normal. Sputum (11/23; 11/25; 11-26): brown, watery, pus 1+, no T.B. Mantoux 1-1000 (10/27) 3+. EKG: "Right axis deviation. Inversion T waves all leads. (P3 not identified)." X-Rays: see chart. Blood culture (10/26): Negative.

Course: Temperature showed daily intermissions to normal for first 7 days, rising to 100-102, usually in P.M. Later temp. became remittent, rising to 102-104 during P.M. falling to 99-101 during morning. For last 3 days temp. fell below normal each day, rising to about 104 in P.M. Pulse 100-160, usually above temp. curve on chart. Respirations 24-40, possibly slightly faster towards the end. 10/29 Both ear drums incised. Culture from left ear: Short chain streptococci. 11/8 Glands palpable in left axilla. 11/4 - Nonproductive cough developed. 11/25 250 cc. of whole blood given by transfusion. 11/16 Few rales heard posteriorly at base of right lung. Breath sounds coarse and slightly increased at right base. Few fine crepitant rales heard at base of left lung. 11/22 "Heart sounds show gallop rhythm." Cough continued. Patient became progressively weaker and died 11/29/35 at 8 P.M.

Dr. Robert Wilson, Sr. (conducting): Mr. Salley, will you open the discussion of this case?

Student Salley: We have a child ten years old, with a history of tonsillitis, multiple joint involvement, palpable subcutaneous nodules and a palpable spleen. This group of findings suggests rheumatic infection more than chronic infectious arthritis. The joint pain was minimal, but that is still possible in rheumatic infection. Still's disease is also possible, and the urinary findings would go well with that condition, being due to amyloid changes in the kidney. Tuberculosis must also be considered in view of the daily afternoon fever, the chest findings and a positive Mantoux. Rheumatic infection may be present either with or without heart disease, but the enlargement of the heart and the electrocardiographic tracing here suggest that the heart is involved. The absence of a valvular murmur is difficult to correlate with this conception, but its absence does not rule out the possibility.

I believe that the illness began in this case as a rheumatic infection involving the joints and the heart, with the later development of tuberculosis, and with death from a terminal pneumonia, as the chest findings developed rapidly towards the end.

Dr. Wilson: Do you think that there is any chance of a more active infection of the heart than rheumatic fever?

Student Salley: Yes. And I would like to see the x-ray of the heart.

Dr. Wilson: That will come later. Miss Willis, will you continue?

Student Willis: The heart is said to be enlarged, and therefore I believe that we have to include some cardiac disease in the diagnosis. In the absence of a valvular murmur or a pericardial rub, I am inclined to believe that the condition is a rheumatic myocarditis. Of course, an endocarditis can be present without a murmur, especially in the early stages, before deformity of the valve has developed.

Dr. Wilson: What do you think of the possibility of tuberculosis?

Student Willis: I don't believe that tuberculosis can be ruled out, but the cough and fever can be explained on the basis of a cardiac condition, or the fever might well be due to the ear infection. Too, she might have had an active infective endocarditis to give her the fever. The previous history suggestive of rheumatic infection and the rapid pulse would go well with such a condition.

Dr. Wilson: Will anyone else add anything?

Student McMillan: The several occasions on which she had albumin and blood in her urine might well have been a focal nephritis from endocarditis.

Student Pope: It doesn't seem to me that the diagnosis of tuberculosis need be made. While it cannot be excluded definitely, there are no symptoms suggestive of tuberculosis which could not be explained just as well on the basis of an infective endocarditis, and therefore the single diagnosis should be sufficient. I believe that subacute bacterial endocarditis comes nearer explaining the whole case than any other single diagnosis.

Dr. Wilson: Dr. Rudisill, will you show the x-rays?

Dr. Rudisill (demonstrating x-rays): On this patient's first admission, only her joints were x-rayed. As can be seen here, the joint spaces are narrowed, and the articular surfaces of the radius and the ulna are definitely eroded

at the wrist. This affirms the clinical impression of an atrophic arthritis, but the etiological agent cannot be identified, of course. This resembles rather closely the cases of Still's disease that I have seen.

On October 29th, during her second admission, the first x-ray of the chest was taken. The heart shadow does not appear materially abnormal. The hilar shadows are somewhat prominent, but not sufficiently so to diagnose the chest as anything but normal. This next film, taken about 3 weeks later, shows a definite change in the size and shape of the heart. There is both a left-sided and a right-sided enlargement, with the former apparently predominating. This type of cardiac enlargement is very suggestive of rheumatic heart infection. There is also some thickening of the main inter-lobar fissure on the right, and some increased clouding at the right base; these lung findings are not characteristic of anything, and could be due to either tuberculosis or pneumonia.

Dr. Wilson: Will anyone who has already spoken add anything, now that they have seen the x-rays?

Student Salley: I still believe that the child had tuberculosis, because of the continued afternoon fever and the weight loss. No doubt the abscessed ears did cause some of the fever, but I do not believe that they are sufficient to cause such a fever. And the positive Mantoux test cannot be disregarded. I believe there is some heart infection, but whether an endocarditis or a myocarditis, I am not prepared to say. It seems to me that there should have been a valvular murmur.

Student Willis: I still believe that there is no need to include tuberculosis in the diagnoses, as the heart infection and the abscessed ears will explain the fever.

Student Pope: I still believe that there is an endocarditis. The right ventricular enlargement, as indicated by the electrocardiogram, cannot be overlooked, and this suggests a valvular lesion at the mitral valve. The absence of a valvular murmur is much less important in the differential diagnosis than its presence would be.

Student McNulty: I don't believe that we have enough here to say an endocarditis. There is no blood in her urine during her stay in the hospital, and her blood culture is negative. I believe that the case is more apt to be a Still's disease with an old rheumatic valvular stenosis (mitral).

Dr. Wilson: But the cardiac enlargement took place over a period of 2 or 3 weeks.

Student McNulty: Yes, that is a very rapid enlargement, and I believe that it must have been more of a dilatation than actual hypertrophy.

Dr. Wilson: We shall get Dr. Lynch to give us the last word on this case.

Dr. Lynch: The case is one of subacute bacterial endocarditis, but, for the benefit of Mr. Salley, she also had tuberculosis.

The body was considerably emaciated, and there were numerous hemorrhagic spots over the anterior chest wall and the face. There was no edema. Several sub-cutaneous nodules were noted over the sterno-clavicular joints and over the Achilles tendons. The joints of the hands and feet were enlarged and spindle-shaped. There was about 100 cc. of clear fluid in the pericardial sac, a moderate effusion. The heart (demonstrating autopsy specimens) is somewhat enlarged from dilatation, but not materially from hypertrophy. The myocardium is pale. A row of small fibrinous vegetations can be noted on the mitral valve leaflets, and there are possibly some smaller fibrous nodules. There is no definite myocarditis, either grossly or microscopically. There is a moderate amount of myocardial degeneration. The spleen is about 3 times the normal size, and the malpighian follicles are especially prominent, a condition that goes along with subacute bacterial endocarditis. The lungs show several small hemorrhagic infarcts, and there are numerous small depressed areas in the renal cortex, representing infarction, and microscopically there is a focal nephritis, doubtless embolic. In addition there is a definite caseation necrosis of a portion of the right lower lobe, with a similar necrosis of the draining lymph nodes, thus constituting the complex of primary tuberculosis.

At the time of the autopsy, we were uncertain whether we were dealing with a simple rheumatic endocarditis or a subacute bacterial endocarditis. Many writers believe that there is no real difference between the two, but that the latter is merely a different manifestation of the former. There was no microscopic lesion, rheumatic or otherwise, anywhere in the heart

except on the valve. This valve (micro-projection apparatus) shows a moderate fibrous tissue proliferation throughout, with a small thrombus attached here; as you can see, it is beginning to organize from beneath, and there are a large number of polymorphonuclear cells collected about its base.

The microscopic study of a small joint from the foot caused a suspicion of rheumatic infection. There were several miliary nodules of collagenous material collected near the joint membrane, but the cellular features were largely absent, so they cannot be said to be Aschoff bodies definitely.

There was one negative blood culture. The streptococcus viridans, which causes a large majority of cases, is a notably elusive organism, and many cultures must be taken before the diagnosis of subacute bacterial endocarditis can be discarded on that account.

Both the clinical and the pathological picture go best with subacute bacterial endocarditis, but there are several features, especially clinical ones, which suggest rheumatism. Differentiation between these two conditions can never be satisfactory until the etiological agent of rheumatic fever is discovered. Pathologically, the Aschoff body is not suffiicient for distinguishing the two, because they are frequently found in cases of subacute bacterial endocarditis, where they are frequently used as a foundation for the statement that a rheumatic infection of the heart usually precedes the onset of subacute bacerial endocarditis.

Dr. Wilson: Many writers assume that all of these cases of chronic arthritis in children (excepting, of course, joint tuberculosis, and a few other specific infeciotns) have their origin in a rheumatic infection. In children, I believe that we must assume that affection of the heart is very apt to be present. In this case, the rapid enlargement of the heart shadow, as seen by x-ray, indicates rather an acute damage to the heart, probably of an infectious nature.

Dr. Waring: When I saw this case on the ward, I thought that there were two separate conditions present, first, a chronic joint disease, and second, some acute cardiac infection. The possibility of tuberculosis was not considered strongly, in spite of the positive Mantoux. The ears might well have been the focus in this case.

Dr. Lynch (closing): The strongest evi-

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dence here against rheumatic infection is the absence of the typical rheumatic lesions usually to be found in myocardium, pericardium and endocardium. The manifest enlargement of the heart, taken clinically and by x-ray to mean a myocarditis, was a combination of cardiac dilatation and a moderate pericardial effusion. The subcutaneous nodules could occur in either subacute bacterial endocarditis or rheumatic infection. I do not believe that the cardiac infection in this case was of long duration.

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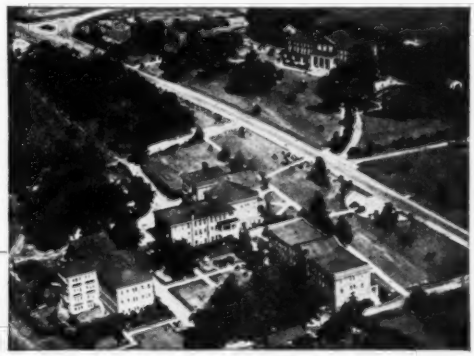

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LATENT AVITAMINOSIS: THE "TWILIGHT ZONE" OF NUTRITION

● Each passing year discloses that the science of medicine has made further application of the results of biochemical research. The time will come when the physician will rarely see examples of extreme human avitaminosis. The high vitamin requirements of infancy and childhood are clearly recognized; they are fulfilled by proper supplements to the diet. The cooperation of intelligent parents will certainly aid in decreasing the incidence of deficiency diseases of childhood.

The matter of the adult vitamin requirement has also received attention; the average individual understands his dietary needs, in a general way. As a result, if the pellagrin be excepted, the practitioner today seldom encounters *extreme* vitamin deprivation in his patients. The fight against vitamin deficiencies is changing in aspect; the problem now is to combat *suboptimal* rather than *subminimal* vitamin intake.

In 1920, Hess described the condition of subacute or "latent scurvy". Evidence since accumulated indicates that similar conditions may exist in respect to the other essential vitamins. This latent avitaminosis has been aptly termed the "twilight zone" of good nutrition (1).

Latent avitaminosis is a state of ill-health difficult to define; it may be characterized by a vague, indefinite sense of ill-being; it is a condition, however, which responds to proper diet under medical supervision; and among the most valuable foods available for diets in cases of latent avitaminosis are canned foods. The literature is replete with articles relating to the vitamin values of canned foods; several of these are particularly pertinent to the present discussion (2).

Two species of laboratory animals, the albino rat and the guinea pig, were carried through ten and eight generations, respectively, on a diet which consisted entirely of combinations of canned foods. No additional vitamin supplements, such as are commonly employed in the breeding or rearing of such animals, were necessary. The varied canned food diet supplied all factors, vitamin or otherwise, for the successful fulfillment of the life cycle, namely growth, maintenance, reproduction and lactation.

The significance of these findings is obvious. The physician may prescribe a diet containing a wide variety of canned foods with the confidence that the combination will supply essential vitamins in amounts consistent with the amounts of the vitamins present in the raw materials from which the canned foods were prepared. Whether additional supplementation with specific vitamin-rich foods or concentrates is indicated, is properly a matter for medical determination.

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(1) J. Amer. Med. Assn. 101, 127 (1933)

(2) Ind. Eng. Chem. 23, 1064 (1931)
Ind. Eng. Chem. 26, 758 (1934)

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THE JOURNAL
of the
South Carolina Medical Association

VOLUME XXXI JUNE, 1935 NUMBER 6

WELCH BACILLUS INFECTIONS. TREATMENT BY AUTOFILTRATE METHOD

By

GEORGE R. DAWSON, JR., M.D.

Resident in Surgery Roper Hospital,
Charleston, S. C.

Gas gangrene infection has been described since 1853 but Welch in 1892 was the first to attribute its cause to an anerobic bacteria. Since the natural habitant of the causative organisms is the intestinal tract of man and animals and the soil, it is in those countries which are the most thickly populated that gas gangrene occurs most frequently.

It was not until the World War that Gas Bacillus infections came into prominence. The soil of Belgium has for centuries supported a teeming population and abounds in all sorts of fecal bacteria. The clothes and bodies of the soldiers in trench warfare were covered with mud or dust and when bullets or shrapnel forced this soil into the muscles a great many developed gas gangrene and about a half of those becoming infected died. In contrast to this, gas gangrene was extremely rare during the Civil War.

Today in civil practice Gas Bacillus infection is not infrequently seen. It occurs most frequently after gunshot wounds, compound fractures and street accidents. In the literature there are a number of cases reported following abdominal operations, appendectomies, gangrenous cholecystitis, intrauterine infections, tonsillectomies, G. C. epidydimitis, intramuscular injections, hypodermoclyses, and hypodermic injections.

Presented at a Staff Meeting, Oct. 18, 1934.
Submitted for publication, Feb. 4, 1935.

ETIOLOGY

There is no specific gas bacillus responsible for all cases—the infection is commonly, but by no means always, a mixed one. The three organisms which are most commonly claimed to be the cause of gas infections are: 1. Bacillus Welchi or B. Aerogenes capsulatus, which is found in 82 per cent of cases, Vibrio Septique, which is found in 10 per cent of cases and B. Oedematiens, which is found in 5 per cent of cases. They are anerobic spore forming organisms and commonly inhabit the intestinal tract of man and animals. B. Welchi is the great gas producer. It requires glycogen for food—hence it lives in muscle. Vibrion Septique produces little gas but a potent toxin and is claimed to be 100 per cent fatal. B. Edematiens produces an intense white edema and it does not travel far from the site of innoculation.

PATHOLOGY

Gas bacillus infection is essentially an infection of muscle. When the muscles are invaded the infection travels from end to end most rapidly. The effort of the body to resist its spread is feeble for there is no definite line of demarcation—no leukocytic infiltration as a barrier to its spread. Instead an intense serous effusion precedes the bacterial invasion and intramuscular planes are filled with serum. The organisms cross this to the next portion of muscle to be attacked. Besides the serous exidation there is gas formation due to the break down of sugar in the involved muscle. This gas is non toxic but adds to the tissue destruction by producing ischemic gangrene. The blood stream is often invaded and some strains are hemolytic. There is a thin dirty looking serosanguinous discharge with a fetid odor.

There is marked local swelling. Of the cardinal signs of inflammation swelling and pain are present; the other two, redness and heat, are conspicuously absent.

DIAGNOSIS

Crepitation of gas in the tissues is usually the first thing that leads us to suspect gas gangrene. The bacteriologist nearly always, and the physician often recognizes the characteristic smell. The wound usually looks dirty and there is a sero-sanguinous discharge with a fetid odor. Gas can be demonstrated by X-ray in tissues where it can not be palpated. The positive diagnosis of the causative agent is made by smear and culture. The systemic results depend on the virilence of the causative organism and the extent of the infection. They vary in our cases from low grade fever and malaise to high grade fever with delirium.

PROPHYLAXIS

Anti-toxin sera, trivalent, is used as a prophylaxtic. In the German army the Gas Gangrene mortality was 0.3% in wounded soldiers who had prophylactic injections and 3 per cent in those who had not.

PROGNOSIS

Untreated cases are almost 100 per cent fatal. Miller, in a review of the literature from Lister to 1931 found the mortality to be 49 per cent—which was the same mortality for the A.E.F. Roper's mortality in cases which were not treated by Welch B filtrate has been 83 1-3 per cent.

In general the prognosis depends on three factors—the virulence of the organism, the location and the treatment. The prognosis is much better if the infection is in an extremity—the best if in the leg below the knee. Since the infection spreads by muscle and since practically no muscles cross the knee there is usually a halt at the knee. For this reason amputation in the thigh region has quite frequently halted the infection. There has been only one case of gas bacillus infection below the knee to die in Roper Hospital, and this case had far advanced cardio vascular disease and thrombosis of the femoral vein. The infection is most serious when it occurs in the buttock or trunk muscles.

TREATMENT

It has been the results of the filtrate treatment that excited my interest in gas bacillus infections. (The accompanying table shows the treatment and results in cases of Gas infection due to the Welch Bacillus). For a number of years Dr. Mood our bacteriologist has treated Welch Bacillus infection with W. Bacillus filtrate (autogenous) when requested to do so by the attending surgeon. The four cases I have seen all recovered. Of the 17 cases of Gas Bacillus infection I have been able to gather from our records the Welch Bacillus was identified in all but one case. Dr. Mood says the filtrate treatment is not as successful in those cases where the gas forming organism is other than the Welch Bacillus.

All of our cases that were not treated by filtrate died except one—a mortality of 83 1-3 per cent.

All of our cases that were treated with Welch Bacillus filtrate recovered except one—a mortality of 11 per cent.

The one case treated with Anti-toxin sera recovered. In all our cases our general treatment has been wide incisions, debridement, antiseptic irrigations and amputations in some cases. In the filtrate treatment 1-2 cc of Welch Bacillus filtrate which was made from the last case in Roper (which is usually several months to a year old) is given hypodermically or intramuscularly as soon as the diagnosis is made. We swab the wound and send the swab to Dr. Mood who cultures the causative organism and prepares the Autofiltrate. The next day we given 1-2 cc of the autofiltrate and 1 cc for each preceding day until the culture from the wound is negative for Welch B. The cultures are negative in a few days after the treatment is started.

There is one point that I wish to stress and that is that amputation is deemed unnecessary in practically every case in which the autofiltrate is used. There were only three cases that had amputation under the filtrate treatment. The only case that died under the filtrate treatment had an amputation. The cases treated with filtrate that escaped amputation all recovered. The cases that had neither specific injections nor amputations all died.

Dr. Mood relates from memory a very in-

teresting case in which the filtrate treatment was used about the time of the World War. The day after an injury to his upper arm the patient had a most virilent and rapidly spreading gas infection which spread from the arm to the chest. Gas Crepitation could be felt over the entire chest wall. The temperature was very high and the patient very toxic. The attending physician said no treatment would be of avail and no surgical treatment was accomplished for the patient was given up to die.

Culture showed a Welch B. and an autofiltrate was prepared and the patient was given daily injections of the autofiltrate. To every one's surprise the day after the first injection the fever was down and the patient felt much better. The temperature returned to normal within a few days and the patient made a complete recovery.

SUMMARY

1. Autogenous Filtrate of B. Welchi has proven to be successful in the treatment of Gas Bacillus Infections due to B. Welchi.

2. How and Why the filtrate treatment is successful is unexplained.

3. Amputations are believed to be contra-indicated when the filtrate and wide incisions are used.

4. Numerous wide incisions and antiseptics are probably the most important part of the treatment.

CASE REPORT

The case we have to present tonight is most interesting. He has recovered from a Welch Bacillus infection, from a depressed fracture of the skull, laceration of the brain, the removal of 8 square inches of his skull, and a staph infection of his cerebro-spinal fluid.

The patient, a 34 year old negro man was admitted to Roper unconscious 9-4-34. He had been in an auto wreck. There was a depressed fracture of the skull over the left Rolandic area and lacerated wounds of the left arm and forearm. All wounds were grossly contaminated with dirt. About six hours after admission when the patient was out of shock (he

ANALYSIS OF CASES OF WELCH BACILLUS INFECTIONS

Case	Location	Type of Injury	Filtrate Used	Amputation	Recovered	Died	Complications
1.	Leg	Gunshot	Yes	0	Yes		
2.	Thigh	Gunshot	Yes	0	Yes		
3.	Leg	Gunshot	Yes	Yes	Yes		
4.	Thigh	Lacerated Wound	Yes	0	Yes		
5.	Wrist	Gunshot	Yes	Yes	Yes		
6.	Tibia	Compound Fracture	Yes	0	Yes		
7.	Arm	Gunshot	Yes	0	Yes		Depressed fracture of skull. Operation—Infection (staph) of cerebro spinal fluid.
8.	Leg	Gunshot	Yes	0	Yes		
9.	Thigh	Lacerated Wound	Yes	Yes	Yes		Died soon after amputation. Apparently of shock.
10.	Tibia & Fibula	Compound Fracture	Yes	Yes		Yes	Died of lobar pneumonia and Chronic tetanus 2 weeks after Welch Bacillus infection had subsided.
11.	Thigh	Gunshot	0	0		Yes	
12.	Buttocks	Lacerated Wound	0	0		Yes	Tetanus infection and Fracture of vertebra and ribs.
13.	Leg	Arterio-scl Gangrene	0	Yes		Yes	Thrombosis of femoral vein.
14.	Abdomen	Gunshot	0	0		Yes	Died of intea abdominal hemorrhage after operation.
15.	Arm-& fore Arm	Compound Fracture	0	Yes		Yes	
16.	Leg	Gunshot	0	Yes	Yes		
17.	Thigh	Lacerated Wound	0	Yes	Yes		Given trivalent sera.

There is marked local swelling. Of the cardinal signs of inflammation swelling and pain are present; the other two, redness and heat, are conspicuously absent.

DIAGNOSIS

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was still unconscious) he was taken to the operating room. The depressed portion of the skull was removed and also a fragment as large as a silver dollar. The lacerated wounds of the arms were sutured after antiseptics were applied.

Two days after admission the temperature rose to 103. Gas could be palpated about the wound areas on the arm and gas odor detected. The sutures were immediately removed, the wounds laid wide open and 1 per cent Dakins applied as a continuous wet dressing. A culture and a smear were taken from the wound and B. Welchi found. 1-2 cc of Welch Bacillus filtrate was given intramuscularly (This filtrate had been made from the last case of Gas Gangrene in Roper—about three months previously.) The next day and each succeeding day for 14 days the patient was given 1 cc. of the autogenous filtrate prepared from the drainage from the wound on the arm.

The temperature came to normal in 4 days and repeated cultures for B. Welchi were negative after 4 days.

Now the patient has a partial hemiplegia on the left side (the depressed fracture was over the right Rolandic area.) The wounds are healing nicely.

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MEMORIAL ADDRESS—DR. WILLIAM EGLESTON

By

F. H. McLEOD, M.D.,
Florence, S. C.

The President Dr. S. E. Harmon

Fellow Members of the South Carolina Medical Association, Visitors and Guests:

At this time, we have a very solemn, sad duty to perform—to do honor and pay our respects to our President who was to have been with us, presiding over this session, but who has passed to the Great Beyond, from which no one ever returns.

At this time, I am going to call on Dr. F. H. McLeod, a very close friend of Dr. W. M. Egleston, to present the memorial on the life and untimely death of our beloved President.

I am going to ask that all rise and stand to receive this report and to remain standing with bowed heads for the full time of one minute after the report has been received, in reverence to his memory.

William Egleston was a man of tender compassion and loving sympathy, of wise conduct, governed by reason and judgment.

Those of us whose joy it was to intimately know him found a charmingly delightful friend and an exceedingly attractive associate. His conversation was always interesting—no bitterness of speech, no hasty thought, no biting sarcasm.

One of his characteristics was love and loyalty for his friends and the thorough enjoyment of medical meetings and other opportunities of meeting groups of his friends.

Some one asked Kingsley the secret of his strong joyous life and he replied: "I had a friend."

For nearly thirty years I had known and loved him. No relationship on earth between man and man could have been more beautiful. Always the same—doing some kindness, ever showing his love. To me an example of fidelity, sacred and sublime to the very end. His appreciation, his full understanding, his every contact wonderful and out of the fullness and sincerity of his heart. Only those who have been privileged to have such a companion may know the loneliness, the emptiness, the sadness.

William Egleston's friendship was an inspiration. Every good man's life provides an environment in which others can see God. Such a life was his.

After graduation in medicine he taught

Read before the South Carolina Medical Association at Florence, April 24, 1935.

anatomy in the Medical School at Sewanee. Later he located in Hartsville, where he engaged in the general practice of medicine. He did a large amount of work, and his love of medicine and his enthusiasm made him very happy—the knowing and serving people.

In the role of general practice he was the ideal Doctor. His interest in those who came under his professional care went further than the immediate disability of his patient. He taught the patient and the household the practical care of the sick, hygiene, sanitation. He taught them preventive medicine. He took his patients into his confidence. They felt secure in his keeping. Faith and interest were mutual. Surely he loved medicine.

He continued his large general practice until his health became impaired a few years ago. During his long years of practice he did not think of his own physical needs. His patients were first. He rested when they were better. Gradually his health failed, but he kept on. His patients knew and understood their obligation to him. Be it said of him, however, that he never embarrassed those who did their best.

Soon after locating in Hartsville he was instrumental in eradicating the town of mosquitoes. At that time the incident was regarded as pioneer work. It created considerable interest and the ease with which it was done was a stimulus to such measures. Always doing preventive medicine—in the home and community. Sanitary measures were his hobby.

For more than twenty-five years he was a member of The State Board of Health, and until he became ill, had never missed a regular meeting of the Board. He was its Chairman at the time of his death. His years of service in this work were years of pleasure. He enjoyed the work and the meetings of the Board. He loved the work and for years it was almost his only change of activity—his relaxation.

He stood for progressive health measures and was a staunch advocate of the relative duties of the Public Health Officer and the man in general practice.

He believed in public education as the function of the Health Officer, other than in the event of an epidemic. He was outspoken against any movement that tended to State medicine. He wanted no infringement on the rights of the man in general practice and he believed that there should be no physical contact between the Health Officer and the individual.

His faith in the medical profession was supreme. He believed that State medicine would destroy the initiative of the physician and destroy the sacred ties between the man in general practice and those who sought his professional care.

He stood for the support of all medical affairs in this State and avowedly stood for adequate appropriations for all health measures. He was a friend of our own Medical School and believed that its excellent work should be rewarded by State aid in sufficient amount to provide its necessary needs.

He advocated the establishment of The State Tuberculosis Hospital at State Park and was greatly interested in its conduct. Its success pleased him greatly. He had always believed that the tubercular patient should be treated in the same climatic situation in which he must live if cured. He lived to see this theory amply proven by the splendid results obtained at State Park.

When America went to war he promptly volunteered. He was not sent over seas, but served at Camp Lee in Virginia, as a Medical Officer. He was disappointed that he could not be nearer the scene of hostilities, but he did not dissent and cheerfully and gladly rendered the high class service he so well was fitted for.

As a citizen he did his duty. He was a devout churchman and his loyalty and devotion to his Church was an integral part of his life and character. Never too busy to go to church. Never too busy to do his church work, whatever it might be.

His interest in the community embraced every form of activity. His business capacity led him into banking and many local enterprises, and for several years his County needed and obtained his supervision. His record of its financial management and organization were models of efficiency.

Dr. Egleston's was a busy life—a real life of service. His devotion to duty, his innate modesty, integrity and self control were dictates of virtue and his affectionate regard for the right. He had a profound respect for an honest man.

The greatest event in his life was the Presi-

dency of The State Medical Association. His appreciation of this honor carried with it an effort to serve the Association as best he could. His physical condition did not permit him to serve as he wished to, but he gave largely and generously of his time.

His generous nature, his devotion to duty invest his memory with respect and admiration. His excellence of manhood, the rounded fullness of his life, his service to mankind, are attainments which we cherish with interest, love and affection, and at the great final review he shall hear: "Servant of God, well done!"

RIDGE MEDICAL SOCIETY MEETS

The Ridge Medical Society met in Dr. Timmerman's office at 7:30 o'clock. Dr. Brunson of Ridge Spring presented a three weeks old white baby with a large protuberance on its head.

It is the twelfth child of its parents eleven of which are living and healthy.

This case elicited much discussion and reports of somewhat similar cases.

Dr. Taylor of Batesburg presented a case of osteo-myelitis of the mandible in a middle aged white man and gave a resume of the etiology and treatment, etc.

This case was discussed by Drs. King and Frontis who assisted Dr. Taylor with the treatment of this case.

One of the unusual conditions was that no teeth had been extracted before the illness of the patient and the X-Ray failed to show any infection until the third week of the affliction.

Dr. Ballinger reported a case of bullet wound in the head of a young white woman who had not realized that she had been shot. She realized that she was injured but thought that lightning had caused it.

Dr. Asbill discussed this case and described the size, texture, etc., and distance that such bullets could travel and the harm that might be done by them.

Dr. Wise told of a man in Saluda being shot and the inability to find the culprit and facetiously said that he must have been in Batesburg when he fired the shot.

Dr. Ridgell read a letter from Professor Southerlin of The Batesburg Grammar School in which he commended Dr. Taylor most highly for his address to the students on the teeth and the proper care of them.

He also commended Dr. Taylor and the society for the good which is being accomplished.

Dr. Wm. B. Timmerman of Johnston and Dr. J. F. Byrd of Edgefield were unanimously elected members of our society.

Various committee reports were made.

Drs. King and Hanna made brief reports of a recent meeting of The Columbia Medical Society which they attended and of Dr. McLester's excellent address.

Dr. F. E. Zemp of Columbia read an instructive paper on ancient medicine, hospitals, etc.

The following were elected officers for the next year.

Dr. W. W. King, President.

Dr. P. A. Brunson, Vice President.

Dr. Wm. B. Timmerman, Vice President.

Dr. W. P. Timmerman, Sec.-Treas.

The president was authorized to appoint the various committees.

Supper was served in The Rutland Hotel where short talks were made by Drs. Zemp, M. Hanna, Wm. B. Timmerman and O. P. Wise.

The Ladies Auxiliary was delightfully entertained in the home of Dr. and Mrs. E. C. Ridgell.

The Auxiliary officers for the next year are.

Mrs. J. D. Waters, President.

Mrs. W. P. Timmerman, Vice President.

Mrs. E. C. Ridgell, Secretary.

Mrs. F. G. Asbill, Treasurer.

Mrs. M. L. Brogden, Delegate.

W. P. Timmerman, Secretary.

April 15, 1935.

THE JOURNAL
OF THE
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JUNE, 1935

OBSERVATIONS AT THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 10 TO 14

The attendance probably surpassed all previous records, numbering about ten thousand. The South Carolina contingent came from all parts of the State. The scientific program was equal to any hitherto presented, and the commercial and scientific exhibits were extraordinary. Everything was conducive to a great meeting. The building facilities satisfied every demand, as might be anticipated when it is considered that we were meeting in the largest building of its kind in the world. The legislative branch of the A. M. A. at the Atlantic City meeting was characterized by a solidarity of sentiment strongly in favor of standing by the age old Principles of Medical Ethics at all costs. There was a reiteration that these Principles are not to be abrogated when a physician becomes a member of a group, a member of a hospital staff or a member of a clinic, even in the slightest degree. A harking back to these basic Principles and anchoring there permantly will do more to stabilize medicine in America than any other gesture.

It was brought out at this meeting that medical education in this country in the next year or so will be put to a crucial test in more ways than one. That is one of the great fundamental foundation stones of the economic structure now being shaken by diverse currents. There is going on the most searching inspection of medical schools and their teaching hospitals ever conducted in any country. Forty-five of these schools have been critically surveyed, and the remainder will be reported on at the next A. M. A. meeting. It is expected that some schools may have to undergo much reorganization to remain in Class A. In this picture comes the question of limiting the student body, for nearly everyone agrees that there are too many doctors in the United States. Fewer and better doctors may be a slogan by this time next year not to be blotted out until the goal has been reached. This would settle many economic problems now so pressing. Along this line comes another pronouncement of the A. M. A. at Atlantic City, that is, that teaching hospitals receiving internes shall be required to give them first class training. Many believe that unless these internes are accorded their just rights, these hospitals should be removed from the Class A list.

For many years resolutions have been introduced looking to the requirement of the A. M. A. to study contraceptives with the view to bringing about modifications in the laws prohibiting universal teachings about them on the part of the medical profession. This year the effort was crowned with success, for a committee of the Board of trustees has been empowered to study the whole problem and report on it at a future meeting.

There was a clarification of the constitution and by-laws of the A. M. A. in regard to the eligibility of physicians moving their membership from one state to another. In many cases a physician moves to another part of the country and retains his membership in the State society from which he moved far beyond the one year limit. This involves the question of jurisdiction and sometimes questions of medical ethics. As it stands now, a doctor moving to a new location must in a reasonable length of time identify himself with the organization there.

One of the long looked for reports was that of the bureau on medical economics of the A. M. A. to suggest plans for providing a satisfactory medical service by the medical profession in every locality. The report by Dr. R. G. LeLand, Chief of the Bureau, and his staff was an exhaustive study of many hundreds of plans now in operation in various parts of the country. As was to be expected, no one plan yet devised can be applicable to all parts of this country. It is advised, therefore, that county medical societies cooperating with the State organization continue their investigations along this line.

So-called State medicine did not come in for the extended discussions in the House of Delegates as at previous meetings for the reason that the basic principles agreed upon by the American Medical Association had already been outlined at previous meetings. There was a note of optimism, however, discernible to the effect that socialization of medicine is certainly not going to take place in this country any time soon.

The reports of the officers of the A. M. A. indicated definite progress along all lines. The financial report was quite satisfactory. The membership was reported decidedly on the upgrade, only a few short of one hundred thousand now. Wonderful work continues to be done by all the bureaus. The oldest of them, the Council on Pharmacy and Chemistry, is now coming into its own as should be the case. The A. M. A. is doing a great work in regard to foods. This leads to the important news for South Carolina that the Board of Trustees of the A. M. A. appointed Dr. William Weston and Dr. J. W. Jervey of this State, together with Dr. E. H. Cary, past president of the A. M. A. of Texas, to make contact with the Federal Government in the interest of a national food laboratory and other means of investigation of foods throughout the country. A resolution to this effect was adopted by our House of Delegates last year and also by the House of Delegates of the A. M. A. at Cleveland.

It is a source of gratification that Dr. Kenneth M. Lynch, Professor of Pathology, at the Medical College of the State of South Carolina, was elected Vice President of the American Medical Association.

The election of the other general officers of the A. M. A. assures sound leadership the coming year, and the place of meeting will be Kansas City.

OCONEE COUNTY MEDICAL SOCIETY

The April meeting was held at Seneca. Dr. Edgar A. Hines, Jr. of the Staff of the Mayo Clinic read a paper on Hypertension and held a clinic presenting the various phases of hypertensive disease. Dr. Hugh Smith of Greenville and Dr. R. C. Bruce, Councilor of the Fourth District were present and participated in the discussions. This meeting was largely attended by the members of the County Medical Society as well as representatives of the dental profession.

The May meeting was held in Walhalla, Wednesday the 29th. The essayist was Dr. W. A. Strickland of Westminster who read a comprehensive paper on The Common Cold. Dr. Strickland not only gave the accepted theories as to the causation of colds but presented elaborate statistics showing the prevalence of colds throughout the United States per capita. While the essayist believes that much remains to be learned about colds he felt that much may be done to prevent them and much may also be done for the comfort of the patient suffering from a cold. At the close of the meeting the Society adjourned to the home of Mrs. H. B. Brennecke for a joint meeting with the Woman's Auxiliary. Delightful refreshments were served by the hostess.

E. A. Hines, Secretary.

WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

ADVISORY COUNCIL

Dr. F. H. McLeod, Chairman ..... Florence, S. C.
Dr. W. P. Timmerman ..... Batesburg, S. C.
Dr. C. O. Bates ..... Greenville, S. C.

OFFICERS

President, Mrs. Charles P. Corn ..... Greenville, S. C.
President-Elect, Mrs. Clarens Owens ..... Columbia, S. C.
First Vice President, Mrs. Carl Epps ..... Sumter, S. C.
Second Vice President, Mrs. J. R. Young ..... Anderson, S. C.
Recording Secretary, Mrs. J. H. Crooks ..... Greenville, S. C.
Corresponding Secretary, Mrs. J. W. Bell ..... Walhalla, S. C.
Treasurer, Mrs. L. H. McCalla ..... Greenville, S. C.

COMMITTEE CHAIRMAN

Press and Publicity, Mrs. L. O. Mauldin ..... Greenville, S. C.
Historical, Mrs. H. M. Stuckey ..... Sumter, S. C.
Hygeia, Mrs. W. C. Abell ..... Columbia, S. C.
Public Relations, Mrs. A. E. Baker ..... Charleston, S. C.
Student Loan Fund, Mrs. W. A. Boyd ..... Columbia, S. C.
Mrs. L. O. Mauldin, Co-Chairman

COUNCILLORS

District 1 Mrs. Kenneth Lynch ..... Charleston, S. C.
District 2 Mrs. Price Timmerman ..... Batesburg, S. C.
District 3 Mrs. J. I. Wicker ..... Newberry, S. C.
District 4 Mrs. O. C. Bennett ..... Spartanburg, S. C.
District 5 Mrs. Frank Strait ..... Rock Hill, S. C.
District 6 Mrs. J. C. McLeod ..... Florence, S. C.
District 7 Mrs. D. O. Winter ..... Sumter, S. C.
District 8 Mrs. V. W. Brabham ..... Orangeburg, S. C.

PRESIDENT'S ADDRESS

By

MRS. CHARLES P. CORN,
Greenville, S. C.

As president of the Woman's Auxiliary to the South Carolina, Medical Association, I have the honor to submit the following report for the year 1934-35. Again we come to the cross roads! We pause to glance at another year's work. We plotted our course at the beginning of the year. Have we kept to the main highway?

Just a year ago you conferred upon me the highest honor within your power, by electing me to the office of President of this organization. I have fully appreciated this honor and I have made an earnest effort, to the very best of my ability to serve you in a creditable manner. This year with it's many duties, and manifold cares is past and I come to place before you the results of my labors.

As your president looks back over a year crowded with pleasure and work she feels again the joy that has been hers, for to her every request from officers and chairmen came a wholehearted response—Each member, chairman and officer, in her own way has projected her personality into the Auxiliary, making the aggregate result, one which she trusts has added to a structure, the foundation of which was built by her predecessors.

At the beginning of the term of office last May in Charleston, minutes of the post executive Board meeting, in Charleston, were typed and sent to each County president and Board member.

Monthly letters or cards have been sent to each County Auxiliary, thereby keeping in touch as best we could. No one could have had a more harmonious, cooperative, or hard working board, and I am glad to have this opportunity to offer them my public thanks and appreciation at this time.

The first Vice-President who is our organization chairman has worked faithfully sending numbers of letters in the interest of organizing new counties.

The second Vice-President, or program chairman, was asked to send out the study envelopes published by the National Auxiliary to each County president for use on her programs and they have been used by some Auxiliaries.

All of the Auxiliaries have contributed to the Student Loan Fund and your chairman of this fund feels sure that we shall be able to assist probably two students to go to college next year.

One great need of our Auxiliary was contact —contact with the County Auxiliaries and with the State organization. Thanks to Dr. E. A. Hines our editor of the South Carolina Medical Journal and to our efficient publicity chairman, we have had splendid reports in our South Carolina Medical Journal almost every month.

In this connection I'll state that I've had the pleasure of visiting several County Auxiliaries this year—Spartanburg, Pickens and Oconee.

At the Oconee County Auxiliary I had the privilege of speaking before the joint meetings of the Medical Society and Auxiliary on the Aims of our Auxiliary. This talk was given at the request of Dr. E. A. Hines. Was invited to Columbia, Seneca and Saluda and Batesburg, but was unable to go.

We have tried to stress Hygeia at all of our meetings, as our State is behind in it's quota of

subscriptions, though the state chairman this year has worked hard to increase the number of subscribers.

I want to ask each Auxiliary if they have not done so already to appoint a historical chairman to preserve records of deceased doctors. Some day we hope to have these published in book form.

The special features of this year's administration are as follows:

First: Two new county Auxiliaries have been organized, making 12 Auxiliaries in all, with paid up membership of 525 members.

The Coastal Society—The combined counties of Colleton and Beaufort with Mrs. Carroll Brown, Jr. as president. The county of Florence, our hostess Auxiliary who is so delightfully entertaining us, with Mrs. O. T. Finklea as president. We are thrilled over these two new Auxiliaries and give them a hearty welcome into our fold.

The second outstanding feature of our administration is that the state constitution and by-laws have been put in order and printed. Copies of the printed constitution have been sent to each county president and board members and Dr. Hines published it in the Journal for us.

Several telegrams, and telephone calls have been made and hundreds of letters and cards have been written this year. Commend me to a post card—quick—easy—cheap—adequate. What need for more?

Our mid year Board meeting was held at the Poinsett Hotel in Greenville in the fall. Twelve members were present. Following the meeting, copies of the executive board minutes were typed and sent to each board member.

As State president I have attended two national Board meetings in Cleveland, Ohio, and also had the honor of singing on the Memorial Service at Cleveland, last June.

Also attended the Board meeting of the Southern Medical Auxiliary at San Antonio, Texas, and represented South Carolina at the Southern Medical Auxiliary there.

Have recently been appointed as chairman of the Budget Committee of the Southern Medical Auxiliary by Mrs. J. Boner White, of Atlanta, who is president of this organization.

Have also recently been appointed as chairman of the committee on Resolutions by the National president, Mrs. Tomlinson, and will be on the program in Atlantic City in June.

This year has been such a wonderful experience I can hardly stop talking about it. In closing let me again thank you all for the splendid support you have given me, for the cordial hospitality I have received in each county I have visited and for the friendships I have made. Am sure you may be relied upon to carry on with my successor, Mrs. Owens, whose services as President of Richland County Auxiliary fits her for leadership of State.

It has been a pleasure to meet here in Florence, this beautiful little city, located in this wonderful section of the State. Here we are enjoying the hospitality of the doctors and their wives and others in the vicinity who are doing all in their power to make our stay pleasant and profitable.

I also want to voice my appreciation to the members of the South Carolina Medical Society and especially to my advisory council, Dr. F. H. McLeod, Dr. C. O. Bates, and Dr. Price Timmerman and to Dr. E. A. Hines the editor of South Carolina Medical Journal. To have served as your leader for this year is an honor and a privilege which shall ever be cherished and I shall always feel that my life will be richer for my year as president of your State Auxiliary.

In closing may I leave with you this little verse:

"The year is closed, the record made,
The last deed done, the last word said
The memory alone, remains
Of all it's joys, it's griefs, it's gains
And now with purpose full and clear
We turn to meet another year."

MINUTES

SOUTH CAROLINA MEDICAL ASSOCIATION

Eighty-Seventh Annual Session
Florence
April 23, 24, and 25, 1935

MINUTES OF HOUSE OF DELEGATES

Tuesday, April 23, 8 P. M.

The House of Delegates of the South Carolina Medical Association met in the auditorium of the Florence Public Library on Tuesday, April 23, 1935, and was called to order at 8:45 p. m. by Dr. S. E. Harmon, President-Elect.

Dr. Harmon read the following message to the House of Delegates, after which the members rose and stood for a minute in silence, in respect to the memory of Dr. William Egleston, President.

MEMBERS OF THE HOUSE OF DELEGATES OF THE SOUTH CAROLINA MEDICAL ASSOCIATION:

I wish officially to call attention at this time to the untimely death of our President, Dr. Wm. Egleston. I ask you all to rise and stand with bowed heads for one minute in respect to his memory.

Your Board of Councilors, who are the trustees of this Association when the House of Delegates is not in session, decreed that upon the death of the President, the President-Elect should assume charge of the office.

Does this or not meet your approval?

It is a great sorrow that our President is not with us to preside. However, it becomes my duty to take his place. I promise to serve you and organized medicine to the best of my ability.

The medical profession is being confronted at this time with many serious and complex problems. It will require the very best mature minds to study and cope with the many problems that are coming up and will continue to come up for a long time. I therefore respectfully request that when you fill the many offices of honor and trust, you fill them with men who are interested and will work, men who are capable and who have the courage to do their duty.

On motion, duly seconded and adopted, the House of Delegates concurred in the action of the Board of Councilors in decreeing that, upon the death of the President, the President-Elect should take charge of the office.

The report of the Committee on Credentials was called for by the President-Elect, and Dr. E. M. Hicks, Chairman, reported 48 duly accredited delegates present.

Dr. E. A. Hines read his report as Secretary-Treasurer, after which he spoke of the postgraduate course in obstetrics now being conducted in the State by Dr. J. R. McCord, of Atlanta, Georgia, and of the plan to form a postgraduate medical assembly, reading recommendations regarding such an assembly from a committee representing seven counties.

On motion of Dr. E. F. Parker, Charleston, the report of the Secretary-Treasurer was accepted and ordered to be spread upon the minutes.

Dr. J. R. Des Portes, Fort Mill, read his report as Chairman of the Board of Councilors, which, on motion, was adopted.

The report of the State Board of Health was called for and was read by Dr. E. A. Hines, Vice-Chairman. On motion of Dr. R. S. Cathcart, duly seconded, the report was accepted and ordered to be spread upon the minutes.

Dr. Roger G. Doughty, Chairman, read the report of the Committee on Public Policy and Legislation, and then made a further report as follows:

Further Report of Committee on Legislation

There is also a bill up concerning State Board of Health Activities. Until tonight I had not considered it likely that it would pass. However, Dr. Blackburn of Marion, thinks it likely that it will be passed. If it is, it will take the State Board of Health away from the Medical Association. It was introduced by Dr. Ben Adams, of Columbia. It is not a good bill; it is a radical bill. You have just heard the report of the State Board of Health. I want to plead with you tonight to do something about this bill, in your own interest if not in that of the State Board of Health.

Another bill has been introduced, by Dr. Blackburn, for the sterilization of inmates of State institutions. He feels that it is a good bill. He feels that it is linked up with the State Board of Health bill. The State Board of Health bill is a bill in which we are obliged to be vitally interested. There is only one way to defeat it that I know of, in the House, and we must defeat it in the House. It was introduced by Ben Adams. The only way to defeat it is for every one of you to go down to the telegraph office when you leave here and send a telegram to your representative opposing it. If you will adopt a resolution here tonight and have the Secretary send a proper telegram to Columbia, to back up your individual telegrams, we shall get somewhere. If the bill is passed, it will be on your own heads.

Now, certain ones of you will be contacted and asked to go to see your representative at home during the weekend. I am going to ask you to do that. You will be given ammunition for your talks.

There is another matter that is up before us, that has been taken up in Columbia, and that is the insurance of employees by a corporation to be formed. This corporation, for the sum of twenty-five cents a week or something like that, is to insure an employee, or an employee and his family, for hospitalization—not for medical attention but for hospitalization—

for three weeks annually. This plan has been fostered by Duke and that group. It is similar to, probably better than any of, the plans now in operation in the State of South Carolina. The corporation is to be made up of appropriate trustees; I think four are doctors, four from the State Hospital Association, and four are business men; and it is to be run by a paid manager, the funds to be collected from the people insured, and the insured person to be hospitalized in any hospital he desires, under the care of any physician he picks, for a period of not over three weeks in any one year. It seems to be a very good scheme. The recommendations made were: (1) That the Committee recommend to this body that approval of the scheme be given, with three provisos—First, that the reserve fund which it is necessary to establish on account of the drain that may occur on the financial structure in case of epidemics be limited to a specified amount, and the sum of $20,000 was named. This is in order to keep the fund from ever becoming a menace, to limit the financial ability of the corporation. Second, to have that corporation recognize the State Medical Association as being the only authority for granting any medical service to people so hospitalized. The question of pathological work and x-ray work comes up. Those things must be decided by the medical profession and not by the corporation. Third, that the Hospital Association and the corporation work with the Medical Association to get through the legislature a law forcing all such organizations to submit to those provisos and to those two limitations by the State Association.

At the conclusion of his report, Dr. Doughty moved that the Board of Councilors be empowered to act in the formation of a corporation to set up a plan of hospital savings and that the Board of Councilors also be empowered to act for the South Carolina Medical Association in granting any powers reserved to the Medical Association under the three provisos named.

This motion was seconded and, after discussion, was adopted by a rising vote.

On motion of Dr. J. H. McIntosh, the House of Delegates went on record as approving the bill, now pending in the General Assembly of South Carolina, providing for the sterilization of inmates of State institutions. The motion received several seconds and, on being put to vote, was carried.

Dr. Douglas Jennings offered the following motion: That the House of Delegates put itself on record, and that the individual delegates express themselves to their representatives, as approving the present set-up of the State Board of Health, and disapproving any change therein. Motion seconded. It was suggested that the members from each county get together and wire their representative. After discussion by several members, Dr. Blackburn, the representative from Marion County, was given the privileges of the floor and spoke on the bill concerning the State Board of Health. Dr. Jennings' motion was then put to vote and was adopted.

At this point, the House of Delegates recessed for fifteen minutes, in order that the suggested telegrams might be sent by the members to their representatives.

The House reconvened at ten-thirty p. m.

Dr. W. Atmar Smith, chairman, read the report of the Committee on Public Health and Instruction, which, on motion of Dr. James A. Hayne, was adopted, the recommendation in the report being also adopted.

The President next called for the report of the delegates to the American Medical Association, and Dr. J. H. Cannon read the report. On motion of Dr. J. W. Jervey, it was accepted as information and ordered to be spread upon the minutes.

The report of the special Committee on Health Insurance and Allied Problems, appointed by the late President, was next called for, and Dr. R. S. Cathcart, the chairman, read the report. Dr. R. E. Abell moved that the report be accepted, that the recommendations of the Committee be adopted, and that the President appoint the committee of five recommended, to be known as the "Standing Committee on Medical Economics," with the clear and distinct understanding that the said Standing Committee on Medical Economics shall have full authority to act as they think best when the House of Delegates is not in session. Motion seconded by Dr. Parker. The President recognized Dr. Cannon, Delegate to the American Medical Association, who read a letter received by him from the American Medical Association, and Dr. Cannon read a letter, under date of April 15, 1935, from Dr. Olin West. The motion to adopt the report, with its recommendations, was then put to vote and was carried.

The President then called for the report of the Committee on Necrology, and Dr. Thomas R. Gaines, the Chairman, read the report, the members standing while the names of the deceased physicians were read.

Dr. J. I. Waring, Charleston, read the report of the special Committee on Mental Hygiene (in the absence of the chairman, Dr. Olin B. Chamberlain). On motion of Dr. Parker, the report was adopted.

Dr. W. M. Sheridan, a member of the special Committee on the Study and Control of Cancer, read the Committee's report, which, on motion of Dr. Parker, was received as information and ordered to be spread upon the minutes.

New Business

Dr. C. O. Bates, of Greenville, extended an invitation to the House of Delegates to hold the 1936 meeting of the South Carolina Medical Association in Greenville.

The President presented Dr. W. R. Dancy, fraternal delegate from Georgia, who expressed his pleasure in being present and extended to the members of the South Carolina Medical Association an invitation to attend the meeting of the Medical Association of Georgia, which is to be held in May.

Secretary Hines read a telegram from the Mayor

of Rock Hill extending an invitation to the Association to meet in that city next year, and an invitation was also given by Dr. E. E. Herlong, of Rock Hill.

On motion of Dr. McIntosh, duly seconded, the invitation to meet in Greenville was accepted.

Secretary Hines read a telegram from Dr. Frank M. Lander, Delegate from Anderson County, saying that he was unable to attend, and a telegram from Dr. H. Marshall Taylor, President of the Southern Medical Association, extending greetings.

Miscellaneous Business

Dr. Robert Wilson spoke briefly on the needs of the Medical College of the State of South Carolina and offered the following motion: That the President appoint a committee from the South Carolina Medical Association, representing the several sections of the State, to cooperate with the Board of Trustees of the Medical College of the State of South Carolina in endeavoring to secure an adequate appropriation for the maintenance of that institution. Motion carried.

On motion of Dr. F. H. McLeod, the following resolution was adopted: Resolved, that the delegates use their individual influence with their legislators to secure adequate support for the Medical College of the State of South Carolina.

Dr. J. P. Price reported that 71 telegrams were being sent to members of the legislature, at Columbia.

Dr. Browning suggested that if the small county medical societies were encouraged to send in reports of their activities to the South Carolina Medical Journal, and if the reports were published, it would be a valuable aid to the work of such societies. Dr. Hines, Secretary-Treasurer, said that he had endeavored at various times to secure reports from the small societies and that he would cooperate in giving publicity to any sent in.

Dr. R. S. Cathcart offered the following motion, which was duly seconded: Resolved, that the House of Delegates elect an Associate Editor of the Journal to assist Dr. Hines, the Editor, and that this matter be referred to the Council with power to act. An amendment by Dr. J. R. Des Portes, providing that such Associate Editor agree to serve without pay, was accepted by Dr. Cathcart, and the motion was adopted as amended.

Election of Officers

The President called for nominations for President-Elect, and Dr. C. O. Bates, of Greenville, nominated Dr. Robert C. Bruce, Greenville. Nomination seconded. A motion was made that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Bruce, for President-Elect. This motion was duly seconded and, on being put to vote, was carried, and the Secretary cast the vote of the Association for Dr. Bruce. Dr. Bruce was declared elected.

For Secretary-Treasurer, Dr. William Weston, Columbia, nominated Dr. E. A. Hines, Seneca, for re-election, which nomination received several seconds. It was moved and seconded that the nominations be closed and that the President cast the unanimous vote of the Association for Dr. Hines, which motion was adopted. The vote was cast, and Dr. Hines was declared elected.

Concilors—

The following Councilors were elected:

First District—Dr. J. H. Cannon, Charleston, (re-elected).

Third District—Dr. W. L. Pressly, Due West, (re-elected).

Fifth District—Dr. J. R. Des Portes, Fort Mill, (re-elected).

Seventh District—Dr. T. R. Littlejohn, Sumter, (re-elected).

Fourth District—(To succeed Dr. R. C. Bruce, now President-Elect) Dr. Hugh Smith, Greenville.

(Dr. J. H. McIntosh nominated Dr. Sam Orr Black, of Spartanburg, for Councilor of the Fourth District, and Dr. Arthur McElroy, of Union, was also nominated, both nominations being seconded. Dr. R. E. Abell moved that the nominee receiving the lowest number of votes, if no one received a majority, be eliminated, and this motion was seconded and was adopted. A vote by ballot was taken, resulting as follows: Dr. Smith, 40; Dr. Black, 18; Dr. McElroy, 15. Dr. Smith was declared elected Councilor for the Fourth District.)

Members of the State Board of Medical Examiners

Dr. John C. Caldwell was nominated to succeed himself as member from the Fifth Congressional District. Nomination seconded. It was moved that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Caldwell, which motion was seconded and, on being put to vote, was carried.

Dr. N. B. Heyward was nominated to succeed himself as member from the old Seventh Congressional District. Nomination seconded. A motion was offered to close the nominations and that the Secretary cast the unanimous vote of the Association for Dr. Heyward, which motion was adopted.

Members of the State Board of Health

Dr. R. S. Cathcart nominated Dr. Kenneth M. Lynch, of Charleston, to succeed Dr. Robert Wilson. Nomination seconded. It was moved that the nominations be closed and that the Secretary cast the unanimous ballot of the Association for Dr. Lynch. Motion seconded and adopted.

Dr. C. F. Williams, Columbia, offered the following motion: Resolved, that the House of Delegates go on record as giving a vote of thanks to Dr. Wilson for the wonderful service he has rendered to the State of South Carolina. Motion seconded, and carried by a rising vote. Dr. Wilson expressed his very sincere appreciation.

Dr. Douglas Jennings, Bennettsville, nominated Dr. Walter Mead, of Florence to succeed Dr. William Egleston (deceased). Dr. W. R. Tuten, of Fairfax, was

also nominated. A vote by ballot was taken, resulting as follows: Dr. Mead, 40; Dr. Tuten, 23. Dr. Mead was declared elected.

Dr. D. LeSesne Smith, Spartanburg, was nominated to succeed himself as a member of the Board. Nomination seconded. Motion that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Smith. Seconded and carried.

Dr. W. R. Wallace, Chester, was nominated to succeed himself. Nomination seconded. Motion to close the nominations and that the Secretary cast the vote of the Association. Motion seconded and carried.

Dr. L. D. Boone, Aiken, was nominated to succeed himself. Nomination seconded. Motion that the nominations be closed and that the Secretary cast the vote of the Association for Dr. Boone. Motion seconded and adopted.

Dr. C. B. Earle nominated Dr. F. M. Routh, of Columbia, to succeed himself. Nomination seconded. Motion that the nominations be closed and that the Secretary cast the ballot of the Association for Dr. Routh. Seconded and carried.

Dr. J. P. Price, Florence, nominated Dr. E. A. Hines, Seneca, to succeed himself. Nomination seconded. It was moved that the nominations be closed and that the President cast the vote of the Association for Dr. Hines, which motion, being duly seconded and put to vote, was adopted.

No further business appearing, the House of Delegates adjourned *sine die* at twelve-twenty o'clock a. m.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

THE OCCIPUT POSTERIOR, AN OBSTETRICAL PROBLEM

The incidence of the occiput posterior position in vertex presentation is greater than has been taught in obstetrical text books. They are frequently not recognized, and in these cases may cause no difficulty in labor. At other times they may present real problems.

The non-recognition of the occiput posterior, explains both the reason why their incidence is understated and why at times they give rise to serious difficulty. Recognition of the underlying cause of dystocia goes far in solving the problem of its relief.

In a recent article (Amer. Journal Obstetrics and Gynecology, 28:5, Nov. 1934) W. C. Danforth, skillful obstetrical diagnostician, gives statistics, based on a series of 1565 cases from his private practice. Each woman was examined by him early in labor and presentation and position determined.

Danforth found the occiput posterior in 443 cases, an incidence of 27.1 per cent in his series. The occiput was posterior and to the right in 380, and posterior and to the left in 57. The greater incidence of R. O. P. over L. O. P. is universially recognized and corresponds with the greater incidence of L. O. A. over R. O. A. Spontaneous rotation and delivery occurred in 125 cases, and spontaneous rotation and delivery by simple outlet forceps occurred in 175 cases. Thus spontaneous rotation occurred in 69 per cent of his cases. In 143 cases (31 per cent) spontaneous rotation did not occur.

Potter (Version—1922), who tries to deliver his cases by podalic version and extraction at the end of the first stage of labor, stresses the relative frequency of occiput posteriors. Naturally he is unable to speak with regard to the frequency with which they fail to rotate.

Williams (Obstetrics, 6th. Edition) states: "In 5488 cases of labor at the Johns Hopkins Hospital, in which the vertex presented, we observed 635 occipitoposterior presentations (11.3 per cent). The number of primary occipitoposterior positions was probably twice as great as is here indicated, but owing to the fact that many of our patients were not examined until well advanced in the second stage of labor, it happened in many cases that anterior rotation had already occurred."

There are a number of factors that operate either singly or in unison to give rise to the occiput posterior position, but these may be resolved into a single ultimate factor, namely, failure of the head to engage in or to maintain flexion. It is associated with extension, of course, to a degree less than that of face or brow presentation.

In almost every case of occiput posterior position certain difficulties may be expected

in labor and certain steps should be taken to render these less noxious. Labor may be expected to be erratic and irregular, the pains tending to develop slowly and irregular. Labor is likely to be delayed. Actual suffering in the first stage of labor is greater. The cervix dilates more slowly and frequently incompletely. Thus labor tends to be decidedly longer. One should attempt to preserve the membranes intact as long as possible, and one should try to conserve the strength of the patient as much as possible. Bladder and rectum should be kept empty. Causing the patient to lie on that side toward which the occiput points aids in producing rotation.

Even though complete rotation occurs, as it will do in the majority of cases, except when the babies are relatively small, long hard labor will be required, and rotation may not occur until the advancing head begins to distend the perineum.

In those cases where complete anterior rotation does not occur four things may happen. There may be no rotation, and labor may become obstructed. Rotation posteriorly may occur, resulting in an occipitoscaral position. These may deliver spontaneously or by the aid of forceps. They usually cause extensive laceration of the perineum. Rotation anteriorly may proceed to a point where the sagittal suture lies transversly, so that one has to deal with the so-called deep transverse arrest. Engagement may not be possible and the head may be arrested as a posterior at the superior strait.

The first problem is one of diagnosis. If one has recognized the condition early, he is in position to anticipate a slow erratic labor and to recognize its cause. If dystocia occurs, he is in position to proceed with judgment and a sense of assurance in the exercise of the obstetrician's art. Quoting Williams again, he says:

"To my mind the main cause of the dread in which posterior presentations are held is the fact that they frequently escape recognition with the results that the large number which rotate anteriorly and end spontaneously are overlooked, and only those cases are recognized in which rotation either fails to occur, deep transverse arrest results, or the occiput rotates into the hollow of the sacrum. Furthermore, these conditions are not diagnosticated until operation interference becomes necessary, and even then not until repeated failure at forceps extraction leads to careful examination and to the recognition that the instrument has been applied improperly."

The second problem and one that is being actively discussed in the literature is the safest and best method of handling the situation, once the cause is determined.

Podalic version is the method of choice when the arrest is at the superior strait. Cesarean section is not indicated solely by reason of such an arrest.

After engagement has occurred, version is not a safe procedure unless one is highly skillful, and the use of forceps is safer. But here again presents a problem, for obstetrical leaders differ in their methods.

Danforth has described a method of manual rotation of the head to an anterior position after which forceps are applied. Many others use a similar method of manual rotation.

Bill applies his solid bladed forceps to the head with the pelvic curve directed toward the anterior face, rotates the head with the forceps, removes and reapplies the forceps, a modified Scanzoni maneuver, which was first described by Smellie, and was practiced by Tarnier. This method is favored by Williams, when manual rotation fails. A modification of this method is to draw the head down on the perineum before rotating with the forceps.

Shears (Obstetrics, Normal and Operative —3rd. Edition, 1920) advises downward traction with a Tarnier forceps, giving at the same time a spiral turn to the handles.

Those who use the Kielland forceps, make a cephalic application of this instrument which possesses little pelvic curve and rotate and extract the head without reapplication. Their use requires skill for they may do great damage to the maternal soft parts.

De Lee describes a method of forceps application and extraction which he terms the "Key in Lock" technique. This is described fully in his text book. He stresses gentleness throughout, and if this injunction is followed, it would appear that his method is the safest for both mother and child of the various methods of forceps retation, when used by the less skilled on the occasional case.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

BLACK SPIDER BITE

Lately the lay press has given great importance to the bite of the Black Spider. There is some question as to whether it is becoming more common in this State, or whether it is only that it is more often recognized and reported. At any rate it behooves us to know something about it—otherwise when we encounter it, it will likely escape our recognition. A very good account of the subject is given by Drs. J. M. Frawley and H. M. Ginsburg of Fresno, California—J.A.M.A. 104:1790, May 18, 1935.

The scientific name for the Black Spider is Lactrodectus Mactans, the female of which species is known as the Black Widow. "It is a large shiny black spider with a spherical body and long slender legs. On the ventral side of the abdomen is an hourglass shaped red or yellow spot. The dorsal surface is usually marked by one or more small red dots." It is generally found around refuse heaps and in outbuildings. A common history is the occurrence of bites on the genitalia in outside privies.

There is some doubt as to the seriousness of the bite. Several series of cases have been reported in which there was no mortality. In those cases reported as fatal, an autopsy had not been performed, thus the proof is left in doubt. Several factors influence the result, chief among them being the susceptibility of the individual; the type of bite as regards the amount of poison and whether it was injected into the blood stream, or only under the epidermis; and the kind of treatment, alcohol apparently being contraindicated.

There is pain and swelling at the site of the bite, with pain throughout the body, particularly in the extremities which become cramped and spastic. This is soon followed by severe pain over the abdomen and rigidity of the muscles, with nausea and frequently vomiting. A burning sensation of the soles of the feet is sometimes present. There is anxiety, headache, ringing in the ears and dizziness. The blood pressure is elevated about 35mm and the polymorphonuclears are slightly increased. The abdominal pain and rigidity may be so marked as to simulate a ruptured peptic ulcer. Important in diagnosis is that there is no point of localization and that the abdominal symptoms are always preceded by the spasm of the muscles of the extremities. Also the patient is not in shock, and the pulse and temperature are normal.

As with a great many conditions early diagnosis is prerequisite for successful treatment. This is directed toward relieving the pain and the muscle spasm, very much as in eclampsia and parathyroid tetany. Stimulants such as alcohol and strychnia are contraindicated. In the series of cases reported by the author magnesium sulphate has been very satisfactory. A 20 cc ampoule of a 10 per cent solution is given intravenously. This is repeated as necessary to overcome the hypertension and the spasticity of the muscles. In eleven cases treated last summer only one dose was necessary, and the patients were usually free from symptoms within twenty-four hours. Morphia is given to relieve pain, and a barbiturate to insure rest. A soap suds enema is administered at the start. Fluids are given freely by mouth.

Editorial Note: Calcium intravenously has been reported as giving excellent results. Not unlikely parathyroid extract would be effective.

EDISTO MEDICAL SOCIETY

The regular monthly meeting of the Edisto Medical Society was called to order at 2:00 p. m. Thursday May 23, 1935, at the Hotel Eutaw in Orangeburg, with the Vice-president, Dr. C. I. Goodwin, Holly Hill, presiding.

A motion was made by Dr. Truluck and carried to hold the regular monthly meeting on Wednesday instead of Thursday on account of Thursday being a half holiday during the summer.

Dr. Truluck read a short article from a busi-

ness magazine on health insurance which drew a great deal of discussion. Not a single member present expressed himself as being in favor of health insurance.

Dr. C. I. Green, a delegate to the state convention, was absent but sent a complete report of the action taken by the House of Delegates. This report was confirmed by Dr. A. W. Browning another delegate to the convention.

Regret was expressed as to the recent deaths of Drs. Geo. H. Walter an active member and E. J. Wannamaker a former member of the society. The following committee on resolutions was appointed: Drs. C. I. Green, V. W. Brabham, and G. M. Truluck.

A committee was also appointed from each county to cooperate with the E.R.A.

The scientific program was as follows: "Head Injuries" as discussed at the state convention by Dr. Fay was discussed by Drs. A. L. Black and A. W. Browning each of whom covered the discussion in a most interesting manner.

In the absence of Dr. L. C. Shecut, Drs. A. W. Browning, H. M. Eargle, and L. Wells discussed "Nephritis in Pregnancy."

Dr. G. M. Truluck gave an interesting review of Dr. Pollitzer's paper, "The Indications For the Removal of Tonsils in Children."

The county health officer, Dr. G. C. Bolin discussed the Rabies situation in the state pointing out that large numbers were reported and that some method should be sought to stamp it out.

The following were present: Drs. J. W. Wyman, V. W. Brabham, J. S. Matthews, C. A. Mobley, G. C. Bolin, Leon Wells, A. W. Browning, A. L. Black, H. M. Eargle, C. I. Goodwin, G. M. Truluck, J. A. Forte, and Jaul Connor.

There being no further business the meeting adjourned.

H. M. Eargle, Sec. & Treas.,
Edisto Medical Society.

COLUMBIA MEDICAL SOCIETY

The Columbia Medical Society met on Monday, May 13, 1935, in the Crystal Room of the Columbia Hotel.

Regular Scientific Meeting—

1. Nostrums, a Public Health Menace—Dr. E. S. Cardwell.
2. Pre-Cancerous Lesions—Dr. H. H. Plowden.

Benj. Rubinowitz, M.D.,
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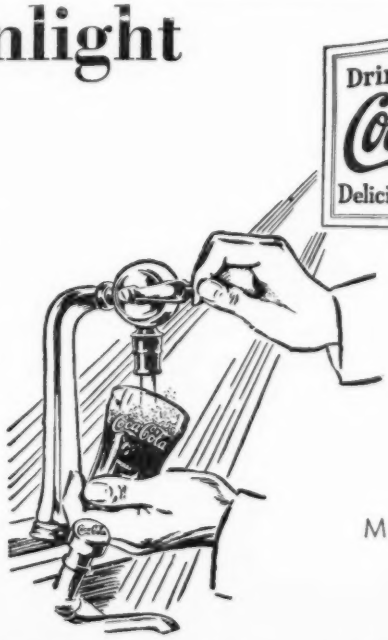

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MALIGNANT MELANOMA (BLACK CANCER)

By

KENNETH M. LYNCH, M.D.
Charleston, S. C.

It is not my purpose here to discuss in any detail the pathology of malignant melanoma, the exact nature of the cells from which it arises, the reasons for its dangerous behavior, or the technic of methods of treatment, but to relate certain observations out of which has come a profound and hateful regard for this important neoplasm.

The common name, black cancer, long given to malignant melanoma, is one most appropriate to its character. Given because of the common colour of the tumor, the name becomes of deeper significance in an understanding of its treacherously malignant qualities. Although at times its characteristic color may not be exhibited, literally as well as figuratively, it is black in nature, and our knowledge of the reasons for its behavior and the prospect we encounter in its established phase are deeply clouded in the same depth of darkness.

My first clearly recalled case of malignant neoplasm was of this order, and one of the latest was like it. In the twenty-five year interim a number of tragic examples have made such an impression that they are readily recalled without recourse to my records.

The first case referred to was that of a young white woman who had developed during a period of a few months great numbers of bluish subcutaneous nodules distributed in rows from the foot to the groin of one leg. She had watched them begin and grow, without an idea of their origin or meaning, and had not thought of their kinship to a small pigmented mole which had existed on the dorsum of her foot since she could remember.

The last case referred to is also that of a young white woman. At the time she was seen she had been under the care of a physician for several months, having x-ray treatment of a small pigmented mole in the skin of the left groin. This had been present as long as she could remember but several months ago had become irritated and increased in size. At the time she was seen the primary growth was no larger than a half dollar, it was raw and its edges indurated; the treatment used had merely aggravated it. There were numerous subcutaneous nodules all over her body and she had lost the sight of one eye from a growth within it, and the roentgenogram disclosed established pulmonary metastasis.

The first case has been concluded for twenty five years, the latter will be within probably a year from the time when the primary naevus commenced to grow.

Among those which come to mind without effort at recollection in the interim between these two occurrences are the following:

A young white woman developed a lump in the axilla. Search of the breast revealing no abnormality, the axillary tumor was excised for biopsy. The pathologist thought the condition was metastatic cancer from the breast and advised the radical breast operation. From study of the microscopic preparation it appeared that this tumor was in reality a metastatic melanoma, in spite of its pigmentless mask, and inquiry developed the fact that a small brown mole had been removed from the skin of the elbow about a year previously.

A few months ago I was asked to do a frozen

Read before the South Carolina Medical Association, April 24, 1935.

section biopsy on another lump at the border of the axilla, the subject a white woman in her fifties. Careful examination revealed no breast tumor, but the son of the patient, a physician, and the consulting surgeon thought the condition must be cancer of the breast. On section, again a pigmentless malignant neoplasm was observed which I believed to be melanoma. On uncovering the patient on the operating table there were revealed large numbers of black skin warts, several scaly, the primary seat of the axillary metastasis being apparently a small irritated one on the arm. These naevi had been present all of the patient's life.

Not many months ago a physician sent in a tiny black skin nodule with a note that the patient from whom it came, a young white man, had become covered by such nodules after a small pigmented mole had been burned with an electric needle. He could hardly believe that these could have come from such an insignificant source.

A white man, age 45, developed metastatic melanoma in the abdominal wall, the primary escaping discovery.

A middle aged white man noticed a pimple on the lobule of the ear about one month previous to consultation, and practically at the same time a lymph node below the ear enlarged, a metastatic melanoma practically simultaneous with the primary.

A white woman, age 40, had a liver colored mole on the leg all of her life, but a few months before she was examined another, pink in color, appeared near it, and two months previous to examination a nodule made its appearance in the popliteal space; this on removal proved to be a melanoma.

A white girl, age 18, noticed a small brown nodule in the skin of the thigh about a year ago; six weeks ago she burned it and it has increased in size and color since that time.

A white man, age 58, injured a "birthmark" on his chest in September. Two months later nodules began to appear over his body, and he died of generalized metastasis within seven months of the injury.

Study of the records of my department as well as of all places where such work is done will reveal case after case of the order of these here briefly recited.

Numerous references are to be found in cancer literature where malignant melanoma, originating from an obscure, insignificant or even undiscovered parent focus has bloomed rapidly as multiple or inaccessible metastatic tumors. It is toward this habit and the additionally vicious tendency that melanoma has to resent meddling that I would direct attention.

The origin of this tumor is from certain pigment forming cells of the skin and eye. Normally these cells are concerned with protection from or utilization of sunlight. In the skin of the negro pigmentation is a function developed beyond that in light skins. It is interesting that the negro is free from the occurrence of tumors of this type in my experience. In this connection, it is said that melanoma occurs frequently in white horses but not in black, although this case is different from the human in that white horses, I believe, are black when foaled, there being a de-differentiation, as it were, in pigment producing cells as the animal matures.

Pigmented naevi are exceedingly common in the skin of white people as congenital collections of melanoblasts. They are potential sources of malignant melanoma. Just what type, if there is a particular form, which may become malignant I do not know. So far as I am aware any of them may. I am particularly suspicious of warty forms, or scaly one, or those which are in position to be irritated. In comparative number the occurrences of malignant neoplasm from them is small, of course, but the danger lies in the fact that the transformation may be abrupt and with little or no warning and the spread may occur so soon and to such an extent that it may be impossible to forestall their fatal progress.

Further, I know of no tumor which resents meddling in such a vicious manner. "Monkeying" with a colored mole in the skin, especially if it has shown signs of activity is pregnant with disaster. Half-way or prolonged measures of treatment, whether by knife, cautery, or ray, are to be severely condemned.

Serious attention to all such skin moles gives opportunity such as hardly occurs with any other class of such high grade neoplasms in the field of cancer prevention.

Potentially most, if not practically all, black cancers of the skin are preventable. Few are curable. When a mole should be treated is a

matter, of course, of judgment in the individual case. Certainly all of any particular significance, exhibiting any feature to call them to attention, should be treated.

When one is to be treated there should be no attack with any idea except complete removal or destruction at one treatment. Whatever method is used that must be the principle; if excision it must be complete, if by heat or ray it must be completely destructive at one application. Otherwise treatment not only does no good but generally does active harm in hastening progress of the condition.

Let the profession be on the look out for pigmented moles, let us warn people of their danger, let us be active against them. When they are treated let it not stop short of complete elimination of the focus. Many black cancers may thus be prevented.

DISCUSSION

Dr. J. Richard Allison, Columbia:

Doctor Lynch has brought to our attention a very important subject and pointed out some of the dangers connected with it. I think it necessary for every physician to be able to recognize these conditions on the skin, and to have some definite method of procedure as to treatment. There are several points that I should like to emphasize.

A typical blue-black melanotic mole is comparatively easy to diagnose. There are however, many kinds of moles that have varied amounts of melanin in them and therefore vary as to their potential malignancy. Then there are certain Keratoses and other lesions on the skin that may simulate melanotic conditions which do not contain the pigment melanin. Any one treating lesions of the skin should be well informed as to the characteristics and appearances of these various lesions.

To wait until a melanotic mole becomes irritated to be treated, is too late. The procedure is to decide on your line of treatment before any changes take place in the mole. There are three methods of removing moles. Surgery, x-ray and radium, and dessication. Surgery is favored by many. X-ray and radium by very few and I personally believe they should never be used. I believe the safest way to remove these moles is by dessication. An area around the mole is infiltrated with novocain and the mole thoroughly destroyed.

Dr. C. B. Epps, Sumter:

A few years ago I had a healthy young woman, twenty-three years old, who came to me with a hard lump on the right side of the upper abdomen. I asked her about it carefully, and she told me that three months previously she had had someone burn out a little black mole about three inches from this area. Well, I decided right away that she was in a hopeless condition and explained it to all of her folks. I told them if they wanted me to I would excise it and send it off for examination, which I did. Dr. Bloodgood, of Baltimore, answered me right away and said: "You are dealing with an absolutely hopeless cancer, and she will be dead within twelve months." Now, she was perfectly healthly in every other way. In a few months she had hard tumors everywhere on her; she had them from her toes up. She lived about six months. I believe the logical way to treat moles, as Bloodgood says, is by free excision. Go wide out, to where you are in healthy tissue, or at least believe you are, and excise them. I believe very few men are competent to burn them out or cauterize them in any way. It stands to reason that free excision out to healthy tissue is better than burning when you do not know how far out that burning is extending. It seems to me common sense and science not to fool with them in any way or burn them but to make a free excision.

Dr. Arthur W. Browning, Elloree:

I saw a very good case of the condition, so beautifully described by Dr. Lynch. A young wife, the only daughter of a fine family of two children. She had a blue-black mold on right leg, just above ankle which she bruised and it became somewhat inflamed. She saw a physician, who treated it. Some months later she developed embarrassed breathing, shortness of breath on exertion. She consulted a physician, who told her she was getting too fat and advised diet and depletion. Later she noticed some enlargement of lymphatic glands in different locations. I saw her in office and noticed cyanosis of finger tips, lips, nose and ears with embarrassed breathing, and could palpate large tumor formations-glands all over body, and was told of the mole. I felt she was a seriously ill patient, had a consultant who agreed with me. I sent her to Dr. Pitts of Columbia for further diagnostic opinion and treatment. He confirmed our opinion of "malignant melanoma," gave her x-ray treatment, etc., but she died in three months. I got up principally to urge, as we have been urged so often, that we not temporize with such conditions but do what is proper, as has been stated by Dr. Lynch, to remove, get rid of them.

Dr. S. E. Harmon, Columbia:

Gentlemen, if you will permit a word from the chair, I wish to condemn in the strongest words the attempt on the part of anyone to treat the condition Dr. Lynch has just described by radium or x-ray. There is only one way in the world to remove those tumors, and that is either by cautery or knife, and be sure you get well beyond the diseased tissue.

TREATMENT OF FRACTURED SKULLS

By
CHAS. O. BATES, M.D.,
Greenville, S. C.

Before going into the subject of the Treatment of Fractured Skulls let us consider the relative importance of the injury in the present day trauma.

We find in 1906 in the Boston City Hospital 1436 skull fractures tabulated by Crandon and Wilson; 80 per cent of these due to falls from heights or kicks from horses. In 1926 McClure and Crawford tabulated 90,000 deaths due to accidents; 7.2 per cent were the results of skull fractures. A study in 1930 by Mock and Tower, taken from the statistics of the coroner of Cook County, showed 1649 accidental deaths; 35.5 per cent were due to skull fracture. The automobile was responsible for 49 per cent of these. Trauma next to heart disease causes a higher mortality and morbidity than any other cause.

Let us not consider the subject in the light of the textbook classification such as fractures of the vault and base, as simple or compound, as linear or depressed. I prefer to look upon the fractured skull not as a fractured bone, but just how much damage that trauma has produced in the brain and its blood vessels. The treatment of fractured skulls cannot be standardized because of the variability in the severity of the injuries. I feel that every case is a case unto itself. (1) However, there is one good axiom, "whenever a serious accident occurs, but results in apparently trivial head injury, consider that head injury as severe until proven otherwise."

MANAGEMENT OF THE ACUTE HEAD INJURY

I use the term acute head injury because quite often in the emergency room you are unable at first to diagnose fracture. The diagnosis should be made by a careful bedside clinical study of the patient. Certainly the acute head case should not be subjected to an x-ray examination necessitating the taking of a number of films and from most trying positions. You will have to hold quite a few of these patients on the table. I feel that this is a critical tax on a seriously ill patient. May I add, let us not allow a loving parent, an interested officer of the law, or a meddlesome neighbor to cause us to subject our acute traumatized head cases to an early unnecessary and sometimes valueless x-ray examination. The x-ray examination can be and should be done at a later and safer time.

All wounds of the head should be most carefully treated because of the danger of infection. A depressed fracture should be elevated, but never until life is safe or at least shock, to a certain degree, has been overcome. Our first thought should be to preserve life. The patient, if in a hospital, should be moved to a room and if shock will permit slightly elevate the head. An ice cap to head if it does not worry patient too much.

BEDSIDE STUDY OF THE PATIENT

I believe more can be learned in the first few hours concerning the prognosis and after treatment of the patient than any other time. It is in this period of five or six hours that we have to try to determine if there is an extradural hemorrhage, for quite a few of the authorities feel that extradural hemorrhage is the only indication for an early operation. An important point in the diagnosis of the extradural hemorrhage is a "lucid interval" between the initial and subsequent loss of consciousness. The patient first is knocked out, but later gets up, walks around, then becomes unconscious. He has a dilated or fixed pupil on the same side as the hemorrhage. The patient may have a motor weakness or paralysis beginning in the face and extending to the arm and possibly leg. Convulsions may, also, follow with the same order—face, arm, and leg. This patient should have an immediate subtemporal decompression and a ligation of the middle meningeal or some of its branches.

THE DIAGNOSIS OF INTRA CRANIAL PRESSURE

In fractured skulls intracranial pressure is always due to hemorrhage or edema. There are varying degrees of brain trauma causing intracranial pressure. Let us think of the head injury where there is no fracture demonstrable as a "black eye of the brain." We have seen the slight blow cause minute petechial hemorrhage around the eye. We have the same condition in the brain that gives us the picture of

*Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

concussion. The concussion cases clear up within a few hours or few days. In this type of case the only necessary treatment is rest.

In the more severe cases the physician or surgeon has to determine how fully nature is compensating for the increased intracranial pressure. We know that space compensation is the principal function of the cerebral spinal fluid. We have seen large tumors removed from the brain where this physiological compensation of cerebral spinal fluid has taken care of the patient as the tumor grew and done it so well the patient was practically symptomless.

It is watching the degree of compensation that is our job. We judge this by the following:

The state of consciousness of the patient, and this is most important of all data. The fact that the patient is unconscious means that the cerebral spinal fluid is not able to compensate for the pressure. The depth of the coma indicates the degree of seriousness of our patient.

The restlessness of the patient. Restlessness is a symptom that might tempt one to give large doses of morphine. This would be the same as masking the symptom in the acute abdomen.

The rate and quality of pulse. The pulse rate will remain slow and regular as long as the intracranial pressure is being compensated. A pulse very slow, say 40, or a pulse that is changing from 60 to 100 every few minutes means a losing battle for compensation.

The respiration remains slow and regular as long as there is compensation, but as compensation becomes broken, the respiration becomes rapid, shallow, and irregular. Cheyne-Stokes respiration indicates marked intracranial pressure.

The change in temperature is a valuable guide. A rectal temperature should be taken every thirty minutes. When the temperature remains under 102 degrees the pressure is being compensated; each degree above that means increasing danger. I have been unable to draw any satisfactory conclusion from blood pressure.

The eye ground examination is of importance but is of more importance after the first 24 hours.

THE TREATMENT OF INTRACRANIAL PRESSURE

A small percentage of cases are due to extradural hemorrhage. The diagnosis being made and the pressure becoming severe, an operation is indicated and ligation of vessel. The large bulk of cases of intracranial pressure are due to other causes.

It is in this group that the authorities differ as to line of treatment.

I do not believe in too early and too frequent use of the lumbar puncture. I feel there are times when the pressure is extreme that it is a life saving measure and tides the patient over long enough to allow a decompression. The lumbar puncture should not be used to relieve pressure caused by subdural or extradural hemorrhage, because it is only by pressure that the hemorrhage is controlled.

I believe a hypertonic solution of glucose 50 per cent in 50 cc doses given at intervals is beneficial. It will reduce the pressure slowly, and at the same time you have the benefit of the nutrient value. In some of the long drawn out cases the nutrition must be taken care of even if through a tube.

Let me again say the greatest treatment for good in skull fractures with or without intracranial pressure is rest. You will have 60 to 70 per cent recoveries in serious fractures of skull from just rest alone. The cases that die within the first 6 hours, again eliminating the extradural hemorrhage, would not get well from any operation. In this type of case death is due to severe brain trauma. There will be a few cases where a well timed decompression done under local anesthesia is of advantage. Today the number of subtemporal decompressions has been reduced to a minimum. I think not over 10 per cent of the cases.

It is in the fracture with intracranial pressure that a most careful and persistent study should be made in any case. The changes in the patient's condition appear so quickly and the time for favorable action is so short that the patient's life, in a measure, depends on the quality of the physician.

By quality, I do not mean a specialist, but one using the best clinical judgment, dictated by common sense and acting on that judgment.

The fracture proper. You will notice I have not discussed the care of the fracture. Compound depressed fractures should be elevated as soon as the life of the patient would not be endangered, because it is in these fractures that

we have to consider meningitis and brain abscess. Meningitis will, as a rule, come on in two or three days; brain abscess later.

The simple depressed fracture should wait several days before operation. The pressure of a piece of bone on or into the brain does not cause any more pain. There is no sensation of pain in the brain substance. You can insert a rather large trocar into the brain without causing any pain.

Fracture into middle ear and nose. The ear and nose should be cleansed, but never use cleansing agent under pressure.

SUMMARY

1. Treatment of fractured skulls cannot be standardized or routinely treated.

2. The first and most important treatment is rest. No unnecessary moving of patient or taking of x-rays.

3. A clinical bedside study of the patient for the first five or six hours to observe and diagnose the degree of intracranial pressure.

4. The treatment of intracranial pressure by rest; hypertonic glucose and saline solutions and possibly lumbar puncture and decompression.

5. *The care of the fracture bone.* The treatment should be secondary to treatment of brain and patient as a whole.

REFERENCES

(1) Harry Mock, Skull Fracture and Cerebral Injuries; International Journal of Medicine and Surgery, January 1931.

(2) Walter E. Dandy; Diagnosis and Treatment of Injuries to Head: A. M. A., Vol. 101, No. 10, September 2nd, 1933.

DISCUSSION

Dr. T. N. Dulin, Clover:

I do not wish to discuss Dr. Bates' paper at all, but I think it is one of the finest papers I have ever heard on that subject. I have been convinced for a number of years that shock kills many of these people. I have stated to my people that if I am ever injured in an automobile accident on the road or anywhere else I want them to warm me up and leave me where I am until shock is over. I think many accident victims are killed by being moved before they recover from shock. Shock kills if intensified by being moved any great distance.

MINUTES

REPORT OF SECRETARY-TREASURER
South Carolina Medical Association

Dr. E. A. Hinês, Seneca, S. C.

In the autumnal glow of twenty-five years service as your Secretary one is tempted to reminiscences, but they might invoke the opprobrium of the twice told tale. Such is not my purpose. It should not be amiss, however, to refer to a few epochs. A quarter of a century in medical history means little in looking backward for thousands of years, but there is ample evidence that since I have been your Secretary the special field of organized medicine has made more advances than in all the centuries preceding.

In this spectacular achievement the United States has led all other countries. The great reorganization of the American Medical Association in 1903-4 and 5 swept the country with great rapidity. The slogan was to enroll practically every medical man in the country. In South Carolina there were about 1500 doctors. Some 900 came into the organization. My predecessors builded well in that formative period, but when I became Secretary in 1910 the backwash of a hurried and extraordinary enthusiasm was apparent. This is inevitable in every great movement. With the higher requirements of medical education the number of doctors slowly but surely decreased until today there are only 1329 physicians in South Carolina and the roll of the Association membership is little larger than it was twenty-five years ago. I believe that we have only a potential membership of one thousand as the outside limit and that would be a higher percentage than now obtains in any state.

We have grown in solidarity as an organization, and that is an important advance. The Secretary's office has become during the years a business office dealing with many problems outside of the realm of scientific medicine. Specialism has changed the aspect of the medical society to a marked degree in twenty-five years, and yet we are proud of our inheritance of conservatism in South Carolina. Allied societies and interests have grown up.

That the present organization is able to maintain its supremacy against the trend of so many diversified interests is indeed amazing, but the pendulum always swings back. Specialism has apparently reached its zenith and is on the decline. The medical

(Continued on page 136)

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JULY, 1935

THE POST GRADUATE OBSTETRIC COURSES BY DR. MCCORD A GREAT SUCCESS

For several months the State Medical Association cooperating with various county medical societies and the Children's Bureau of the United States have been putting on Obstetric Institutes with the view to reducing the maternal and infant mortality in South Carolina. Dr. J. R. McCord, Professor of Obstetrics of Emory University, at Atlanta, Georgia, has been conducting these institutes in a very able and efficient manner. It is believed that before the season closes at least half of the doctors in South Carolina will have participated in this State wide program. The attendance has been unusually good and the wide territory from which these physicians come indicates an intense desire on the part of the profession of South Carolina to bring the State in line with the most advanced thought in the prevention of undue morbidity and mortality in obstetric practice. The following physicians have attended these courses:

Obstetric Institute—Anderson, South Carolina
April 15-19, 1935

Abbeville: Drs. D. S. Knox, F. L. Mabry, A. E. Poliakoff.

Anderson: Drs. D. J. Barton, Herbert Blake, Louis J. Bristow, G. W. Chambers, G. S. Clinkscales, Homer M. Daniel, E. E. Epting, J. Louis Gray, Samuel H. Haddock, H. Y. Harper, H. H. Harris, B. A. Henry, E. O. Hentz, J. N. Land, J. W. Martin, J. C. Milford, L. A. Nimmons, George T. Peel, H. A. Pruitt, Olga V. Pruitt, J. O. Sanders, A. L. Smethers, Wade Thompson, J. B. Townsend, Frank J. Wrenn.

Belton: Drs. L. R. Kirkpatrick, Wm. L. McIlwain, Joseph T. Marshall.

Calhoun Falls: Dr. J. V. Tate.

Clemson College: Dr. Lee W. Milford, Miss Janet Sikes, Miss Irene Julian.

Donald: Dr. B. H. Carlton.

Due West: Drs. M. Baldwin, W. L. Pressly.

Easley: Dr. L. R. Poole.

Fair Play: Dr. W. C. Mays.

Greenville: Drs. H. P. Bailey, Perry T. Bates, B. C. Bishop, Thomas Brockman, Robert A. Brown, Jr., Sylvester Cain, Jr., Thomas G. Goldsmith Decherd Guess, C. A. Henderson, T. M. Northup, Jack D. Parker.

Greenwood: Drs. C. H. Blake, W. G. Bishop, R. M. Fuller, Dewitt L. Harper, J. C. Harper, J. D. Harrison, G. P. Neel, S. W. Page, C. J. Scurry, W. A. Simpson.

Honea Path: Drs. E. R. Donnald, J. W. Haynie, D. C. Stoudenmire.

Liberty: Dr. W. A. Sheldon.

McCormick: Dr. C. H. Workman.

Ninety Six: Dr. George L. Kennedy.

Pendleton: Dr. W. E. Bickley, C. C. Horton.

Pickens: Dr. N. C. Brackett.

Seneca: Drs. E. A. Hines, J. E. Orr, S. H. Ross, Jr., J. N. Webb

Six Mile: Dr. D. E. Peek.

Slater: Dr. L. W. Wood.

Starr: Drs. Goodman Bare, George C. Pettigrew.

Travelers Rest: Dr. S. R. Gaston.

Walhalla: Drs. J. T. Davis, J. A. Johnson, B. J. Sloan.

Westminster: Drs. T. G. Hall, F. T. Simpson, Wm. A. Strickland.

Williamston: Drs. Wm. T. Lander, Frank Lander.
Hartwell, Georgia: Dr. B. C. Teasley.
Attendance, 88; number of communities in South Carolina, 25; 1 in Georgia.

Obstetric Institute—Spartanburg, South Carolina
June 24-28, 1935

Blacksburg: Dr. E. E. Strong.
Clifton: Dr. H. W. Koopman.
Converse: Dr. Paul M. Thompson.
Duncan: Dr. J. C. Moore.
Gaffney: Dr. J. P. Thomas.
Greer: Drs. R. C. Alverson, H. L. Brockman, M. L. Peeples, Jr.
Inman: Drs. C. J. Miller, George E. Thompson.
Lockhart: Dr. W. D. Hope.
Lyman: Dr. R. F. McKown.
Spartanburg: Drs. Sam Black, A. R. Fike, A. S. Gross, H. E. Heinitsh, Jr., J. H. Heming, W. B. Lancaster, J. J. Lindsay, H. E. Mason, R. E. Poole, F. H. Sanders, R. A. Way, O. C. Alford.
Union: Drs. Harold P. Hope, A. P. McElroy, F. P. Owings, F. P. Salley, Paul K. Switzer.
Woodruff: Dr. O. H. McCord.
Spartanburg: Drs Cecil Rigby, W. W. Boyd.
Attendance, 32. Number of communities, 12.

OBSTETRIC INSTITUTE
Columbia, South Carolina
July 8-12, 1935

Aiken: Dr. J. R. Howell.
Batesburg: Drs. A. L. Ballenger, W. Wyman King, W. P. Timmerman.
Blaney: Dr. W. D. Grigsby.
Camden: Dr. S. F. Brasington.
Chapin: Dr. Robert M. Graham.
Chester: Dr. W. R. Wallace.
Columbia: Drs. E. W. Barron, Alfred F. Burnside, O. J. Champion, W. D. Chappelle, M. W. Cheatham, L. C. Davis, J. A. Dillard, H. R. Dove, Thomas M. Dubose, Jr., B. A. Everett, W. E. Fulmer, Jane B. Guignard, W. A. Hart, Charles M. Lide, C. K. Lindler, Clarence E. Owens, Frank C. Owens, Benjamin Rubinowitz, Robert E. Seibels, C. E. Stephenson, S. Watson Talbert, Edythe Welbourne.
Eastover: Dr. Garden C. Stuart.
Leesville: Drs. K. L. Able, James Crosson, D. S. Keisler.
Lexington: Drs. J. H. Mathias, G. F. Roberts.
Lugoff: Dr. J. W. A. Sanders.
Newberry: Drs. R. W. Houseal, T. H. Pope, T. W. Smith, J. K. Wecker.
North: Drs. James N. Fort, M. L. Nelson.
Pelion: Dr. A. T. Hutto.
Pinewood: Dr. Walter E. Whitley.
Pomaria: Dr. Z. T. Pinner.
Prosperity: Drs. John J. Dominick, George Y. Hunter.
Ridge Spring: Drs. P. A. Brunson, D. B. Frontis, Fletcher G. Asbill.
St. George: Dr. J. B. Johnston.
Saluda: Dr. J. D. Waters.
Sumter: Drs. J. J. Chandler, Carol B. Epps.
Wagener: Dr. M. W. Webb.
Whitmire: Dr. Hilland B. Thomas.
Winnsboro: Drs. John C. Buchanan, Jr., Amos C. Estes, Samuel Lindsey, C. S. McCants.
Augusta, Georgia: Drs. A. J. Kilpatrick, A. A. Walden.
Attendance—63.
Number of communities—24 (South Carolina), 1 (Georgia).

EDISTO MEDICAL SOCIETY

The Edisto Medical Society met Wednesday, June 6, 1935, at Dr. L. P. Thackston's country home, "River's Turn."

Dr. C. I. Green read a paper on the "Differential Diagnosis of Appendicitis, Salpingitis and Pyelitis," history of the case, location of pain, type of pain, temperature, urine, white blood count and the general appearance of the patient. The discussion was opened by Dr. C. A. Mobley and was followed by the following: Drs. H. J. Stucky, I. M. Stucky, Browning, Thackston, Shecut, Moore, Symmes, and Truluck.

Following a brief business session the meeting adjourned to a delightfully served fish stew and fry prepared by Dr. G. C. Bolin.

The following were present, Drs. H. P. Moore, C. A. Mobley, L. C. Shecut, T. M. Stuckey, H. J. Stuckey, G. M. Truluck, A. W. Browning, L. Wells, J. W. Harter, T. M. Symmes, J. A. Forte, H. M. Eargle, C. S. Green, L. P. Thackston, G. C. Bolin and H. T. Schiffley.

H. M. Eargle, Sec. & Treas.
Edisto Medical Society.

MINUTES

(Continued from page 134)

schools are revising their curriculums looking toward the better training of the general practitioners. The fascination of quantity in our schools is giving way to quality in the selection of future doctors.

Here organized medicine has wielded an influence of incalculable value. We have at last become aware of such an entity as medical economics. It has always been with us, but we did little about it. It is in this period, then, that we find ourselves now, and solidarity of effort is our only hope.

Leadership is at a premium in the medical society of today. It is no time to bestow empty honors, for

(Continued on page 144)

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"DIAGNOSIS AND TREATMENT OF INJURIES OF THE HEAD"

In a special article in the J. A. M. A. September 2, 1933, Dr. Walter Dandy of Baltimore discusses the diagnosis and treatment of injuries of the head. He is directly opposed to a number of the practices commonly used. The subject is discussed so clearly and concisely that it is thought advisable to review the article in this column. The fact that it was published over a year ago does not impair its value as there has been no subsequent advance in our knowledge of this condition. The diagnosis will be considered in this issue while the treatment will be reserved for a subsequent one.

In evaluating injuries of the head it should be emphasized that alterations in the skull are of relatively minor concern. Of importance as regards life is the injury to the brain and its blood vessels. Accordingly X-ray examination should not be the first consideration as it gives very little information concerning this. Furthermore it is a serious tax upon a critically ill patient. It is of value particularly in disclosing depressed fractures—the one most important concern in the bone—but even here inspection and palpation are almost as satisfactory.

Lumbar puncture is advised against as being dangerous and offering little of value in diagnosis. While it will indicate the degree of intracranial pressure, it will not do so with more certainty than will careful studies of the patient. The dangers are the extension of an extradural or subdural haemorrhage which follows the temporary relief of pressure, and trauma to the brain of similar nature to that which occurs when lumbar puncture is done in the presence of increased pressure caused by a brain tumor. It is the author's contention that in the presence of increased pressure lumbar puncture invariably produces trauma to the brain, and that the apparent immediate benefit is soon followed by a deeper coma.

The main diagnostic consideration during the acute stage is how fully nature is compensating for the increased intracranial pressure. Especially is it important to know when compensation is breaking, for it is at this stage that treatment, if indicated, is imperative. This clinical judgment is based upon consideration of (1) state of consciousness, (2) restlessness, (3) involuntary micturition or defecation, (4) the rate and quality of the pulse, (5) respiration and (6) the temperature.

Of these the state of consciousness is most important. A deepening state of coma indicates that the patient is becoming worse and the intracranial pressure increasing. Conversely an improving state of consciousness indicates that the patient is improving correspondingly. As a rule involuntary urination or defecation indicates an alarming state of increased intracranial pressure. Restlessness is a valuable sign of impending coma. Accordingly it should not be allayed with sedatives, as the picture will be masked.

The pulse remains slow and regular as long as the intracranial pressure is being compensated. It rises and becomes variable in rate and volume when compensation begins to break. Respirations likewise are slow and regular until compensation breaks when they become rapid, shallow and irregular. Irregular and Cheyne-Stokes respirations are evidence of an advanced stage of intracranial pressure.

The change in temperature is a sensitive indicator of the state of intracranial pressure. The rectal temperature should be taken every 15 to 20 minutes during the danger period. A temperature below 102 degrees indicates that compensation is taking place. Each degree above this signifies increasing danger.

Contrary to usual opinion, the author has found the blood pressure to be of little value.

In brief, clinical observation is the most informative and safest way of determining the condition of a patient suffering from a recent head injury. X-ray examination and lumbar puncture add little of diagnostic value and are often attended by danger to the patient.

PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 286 (20056), March 8, 1935

Service of Dr. Finger

Student Cain (reading):

Negro male, 44 years, admitted 12-25-33, died 2-2-34.

History: Indefinite symptoms (headaches, dizziness, hot flushes, lumbar pains) for several years. In 1931 had a "sore stomach" and was given 4 injections of neoarsphenamine between July 1931 and his present admission. His blood was "4 plus" at that time. Seven weeks before admission his physician told him he had a swollen liver, and advised more injections. Has had dull aching pain in abdomen since that time, and possibly some fever. Hiccough developed 4 days before admission, continuous since, preventing sleep. Has vomited several times during last 4 days, but no hematemesis. Has had tarry stools several times lately, and patient thought this due to "666" that he was taking. Appetite good, bowels regular. For past year has taken ½-1 pint of whiskey daily.

Physical: Temp. 101, pulse 120, resp. 26. B.P. 140-80. State of nutrition good. Examination normal except for the abdomen. The abdomen was very tense; very tender over upper abdomen, particularly between umbilicus and right costal margin. Liver palpable down to umbilicus, left lobe apparently more enlarged than the right.

Hospital Course. After 5 days of constant, low-grade fever, temp. became normal, remaining so until last 10 days, when it began to rise each P.M. to about 100, rising on the day of death to 103. Epigastric pain and burning continued; belching common. Hiccough improved. 1-15 Liver considerably enlarged since last examination, especially the right lobe. Liver harder, but not tender. On 1-27, the hiccough returned, associated with considerable vomiting, and with a dull pain across upper abdomen and lumbar region of back. Orthopnoea also developed. On 1-31, he became semi-comatose, remaining so until death.

Lab.: Blood Kolmer and Kline 4 plus, 3 plus. three urine exams. showed nothing abnormal except 4 plus albumin on the last exam. Blood Counts (12-26; 1-27) Hb. 68%, 49% (D); WBC 13,700, 8800; polys. 90%, 79%; lymphs 9%, 18%; monos 1%, 1%; eosinophiles 0, 1%. Feces showed nothing abnormal. 12-29 Van den Bergh, direct neg., delayed direct positive, quantitative 2.1 mgs. Repeated (1-4) direct neg., delayed direct positive, quantitative too low for determination; icterus index 12.6. 12-27 Amylase test 6,000 units. 12-27 day and night urines both contained urobilin 3 plus; urobilinogen neg. 12-29 Whole blood phosphatase 7.4 units, serum phosphorus 3.2 units. Blood Chemistry (12-25; 12-27): Urea N. 12 mgs, 14 mgs; sugar 125 mgs, 152 mgs. 12-26 Rose bengal liver function test 37% of normal. 1-23, blood fragility, hemolysis began at 0.38% NaCl, not complete at 0.28%. On 12-27, X-ray exam. of chest: "Negative except for slight widening of aorta."

Dr. Robert Wilson, Sr. (conducting): Mr. Zalin, will you open the discussion?

Student Zalin: The whole case impresses me as liver disease of some sort. The greater enlargement of one lobe, in the presence of a four plus Wassermann, makes it seem to me that the disease is a gumma of the liver. On the other hand, there are several symptoms pointing rather indefinitely to the stomach, as the "sore stomach" and the vague abdominal discomfort that has been present for some time, and the questionable tarry stools. These suggest the possibility of a primary carcinoma of the stomach with metastases to the liver.

The blood fragility test indicates that the liver enlargement cannot be that of hemolytic jaundice. The positive delayed direct Van den Bergh tests indicate direct damage to the liver cells rather than an obstructive lesion of the biliary system. The high blood count is a little suggestive of an abscess of the liver, but as nothing else points in that direction, I would tend to disregard it. I believe that the immediate cause of death was a toxemia.

Dr. Wilson: Mr. Assey, will you continue the discussion?

Student Assey: The liver is certainly the seat of the chief disease process in this case. The vomiting, cachexia, tarry stools and anemia suggest to me very strongly the possibility of carcinoma of the stomach, with liver metastases occurring before pyloric obstruction, and the liver metastases being the outstanding process. A diffuse syphilitic hepatitis, of the type thought to occur in secondary syphilis, is also highly possible. Abscess of the liver could give just such a picture, especially in view of the leukocytosis, but I am inclined to lean away from that diagnosis. Primary carcinoma of the liver must also be considered, but I believe that it would give a much more intense and increasing jaundice.

Dr. Wilson: Mr. Hayne (Isaac), have you something to add?

Student Hayne: I also believe that the long duration of the disease, with soreness in the epigastrium, slight jaundice, what is apparently a smooth enlargement of the liver, especially of the left lobe, in conjunction with a four plus Wassermann, point towards a syphilitic condition of the liver. While many of the symptoms do suggest carcinoma of the stomach in a vague way, I do not believe that malignancy of the stomach would last this long, while this would seem to be about the proper duration for a syphilitic disease of the liver. Syphilis usually gives a slight jaundice, with a long drawn out history of liver disease.

Dr. Wilson: How would you rule out primary carcinoma of the liver?

Student Hayne: Primary malignancy of the liver is a very rare tumor of the liver, while secondary malignancies are relatively common. So if I felt that the process was a malignant neoplasm, I would be inclined to call the liver changes secondary. If it were a malignancy of the stomach of this duration, I believe that there would be more cachexia, and therefore favor syphilis as a more likely disease. But I disagree with Mr. Assey that the jaundice of primary carcinoma of the liver is necessarily intense.

Dr. Wilson: Mr. Fouche?

Student Fouche: The gastro-intestinal symptoms impress me especially, and accordingly I believe that the case is one of primary carcinoma of the stomach with metastases to the liver. It is very hard to rule out syphilis of the liver, but the liver enlargement would seem to be greater and coming on more rapidly than would be expected in syphilis. Too, there should have been improvement under anti-syphilitic treatment. Another thing to be considered is an early cirrhosis of the liver, due to the excessive alcohol that this man has apparently been taking. However, in the stage when the liver is very large, due to the fatty degeneration of the liver cells, it usually does not produce such severe symptoms, and the liver usually shrinks before death, while this liver has apparently continued to grow larger. Biliary cirrhosis usually occurs in younger individuals, and the jaundice is deep and persistent.

Dr. Wilson: How would you differentiate primary carcinoma of the liver from secondary carcinoma there?

Student Fouche: You can't do that until the primary source elsewhere is found. The possibility of the stomach being the primary seat of a cancer has not been ruled out in this case by x-ray or otherwise. The stomach is the commonest source for a secondary liver cancer.

Dr. Wilson: How about the fever and the Leukocytosis?

Student Fouche: I believe that there was an infection somewhere, but the examination does not give any pointers as to its location. There is no definite indication of abscess of the liver, amoebic or otherwise, and I would hesitate to make that diagnosis.

Dr. Wilson: Dr. Johnson, will you discuss the laboratory aspects of the case?

Dr. Johnson: There is no absolutely definite test to tell us the exact nature of the liver damage. The fact that the Van den Bergh test gives a positive delayed direct reaction, and not a positive immediate direct, indicates direct damage to the liver cells rather than an obstruction to the biliary passages. The quantitative Van den Bergh and the icterus index indicate that the jaundice is latent, that is, not clinically recognizable. The amylase test has its value in ruling out the possibility of pancreatic disease; here the test is within normal limits. The urobilin and the urobilinogen appear paradoxical in their relation to each other here, and this is doubtless due to some lapse in technique; the urobilinogen should be positive in the urine normally, and increased in any condition that

gives an increase in the urobilin. The phosphatase test indicates that the liver damage is not of an obstructive type, as in obstruction the test usually gives about 12 units. The fragility test shows that the liver enlargement is not that of hemolytic jaundice.

Dr. Wilson: If the diagnosis of cancer of the liver is made, the decision must always be reached as to whether the cancer is primary or secondary there. The latter is, of course much more common. It is my belief that this patient has not had liver enlargement very long, probably just a little over the seven weeks before admission, when it was first recognized. Primary carcinomas of the liver progress much more rapidly than secondary ones. The symptoms recorded here are certainly insufficient to make a diagnosis of carcinoma of the stomach. The fact that the chart is lacking in an x-ray of the stomach and a gastric analysis suggests that the internes and the visiting physicians had some good reason, probably not stated on the record, for not leaning towards the diagnosis of carcinoma of the stomach. I believe that this is a case of primary carcinoma of the liver, due to the relatively rapid enlargement of the liver, and the failure to find a primary source. Dr. Lynch will straighten out the difficulties in this case for us.

Dr. Lynch: While I was listening to this discussion, I have been trying to picture how syphilis could cause such a picture as we see here. There could be no such rapid enlargement of the liver as this with syphilis, and there would probably be little or no pain. Tertiary syphilis of the liver can occur in two forms. The gumma, which is apt to give a localized enlargement, would probably not cause liver failure; at least I have never seen it do so. The other type of tertiary syphilis of the liver, the "syphilitic cirrhosis," resulting from the healing of multiple gummata, would give a smaller and a shrinking liver, with portal cirrhosis effect, that is, with ascites. Therefore I do not believe that the diagnosis of syphilis of the liver could be justified in this case.

If you are thinking of a metastatic carcinoma of the liver, you would certainly expect to find some evidence of the primary growth, altho that is not always the case. The stomach cannot be incriminated definitely in this case, altho it would seem that more studies should have been directed towards that organ with the idea of definitely ruling it out. Furthermore, primary carcinoma of the liver is not such a rare disease as we are frequently led to believe; at least that is not our experience here.

(Demonstrating autopsy specimen) This liver is the seat of a primary carcinoma of the diffuse type, arising from the liver cells. The other form, arising from the bile ducts, is the one that is commonly associated with a considerable degree of jaundice. The liver cell carcinoma, the "hepatoma," may occur either as a tumor widely scattered throughout the liver, with multiple nodules of relatively small size, or as a tumor more localized, developing one or more large nodules. This case is of the first type of hepatoma, the diffuse form, and some think that this arises from multiple foci, instead of from a single tumor with subsequent metastases.

Primary carcinoma of the liver apparently arises in many cases from livers that are already the seat of disease, as a "toxic cirrhosis," or a portal cirrhosis. In this individual case, the man's history of arsenical treatment could conceivably have given rise to a toxic cirrhosis. Or his alcoholic habits could have caused an alcoholic cirrhosis.

Jaundice in primary carcinoma of the liver will depend either on sufficient destruction of liver cells to give "toxic jaundice," or on obstruction of the bile ducts, with "obstructive jaundice." Primary carcinoma of the liver can possibly occur without any jaundice at all. Ascites also may or may not be present.

The frequent question that is heard in these conferences as to leukocytosis in cancer needs to be answered again. In all cases leucocytosis can be assigned to infection or to necrosis within the too-rapidly-growing tumor when seen at autopsy, and there is no reason to assume some other vague or unreasonable explanation. In this case there was considerable necrosis of the tumor proper, with a suspicion of infection there, altho the liver is usually well protected from infection.

(Micro-projection apparatus) you see here the islands of cancer cells, large, active and numerous, and bearing a rather definite morphological similarity to liver cords. They tend

to be arranged in groups, separated from each other by fibrous tissue in which can be seen a few compressed liver cells. The appearance of this collapsed tissue, with its contained liver cells, suggests very much the appearance of the liver of so-called "healed acute yellow atrophy," or "toxic cirrhosis," and in this case I believe that there is such a background.

This other slide shows tumor emboli in the arteries of the lung and gives an excellent demonstration of how pulmonary metastases take place. You see here the active tumor cells, exactly similar to those we saw in the liver, encased in the branches of the pulmonary arteries. These walls are swollen and distended, but there is as yet no actual invasion; this is to be anticipated however, and it is by such direct growth into the walls and peripheral extension that tumor metastases are usually established in the lungs. There is also, as you can see here, an early bronchopneumonia.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA, November, 1934, Philadelphia and London, W. B. Saunders Company.

There are a large number of valuable articles in this volume of importance to the general practitioner. One, in particular, is worthy of mention, The Clinic of Dr. Harlow Brooks of Bellevue Hospital, The Failing Heart: Its Recognition and Management. He makes a very significant statement difficult at times to remember. "In our treatment of the failing heart, we must above all else treat the patient as a whole and as an individual, for it is the whole person that is sick, not just the heart, and not alone the body, but the mind of the human, also; each case must be considered as a personality, as well as a mechanism, out of order." Drug therapy is still an important matter, however, in the management of heart failure in the opinion of the author. Among them adrenalin, caffeine, atropine, strychnine very rarely, digitalis of course. He makes an interesting remark about this drug. "Digitalis is so remarkably effective in very many cases of chronic heart failure that it not only relieves the patient but also actually cures many cases of malignant therapeutic nihilism. Morphine is imperative at times. He even gives calomel credit for being of value in certain cases. Alcohol is of some help at times. The bromides and chloral hydrate have a place though very old drugs they are. There are, of course, many other measures and drugs mentioned but in the main the author pleads for simplicity in the treatment of the failing heart.

SYNOPSIS OF PEDIATRICS, by John Zahorsky, A.B., M.D., F.A.C.P., Prof. of Pediatrics, St. Louis University Medical School. Fabrikoid. Price $4.00. Pp. 359, with 77 illustrations and 6 color plates. St. Louis. C. V. Mosby Company, 1934.

It is not surprising that so excellent a clinician as Dr. Zahorsky, nor that one who has had so much experience in pediatrics, should be able in a small volume of 60 compact chapters to cover the field. The work is of course concise and extremely practical, there being little space allotted to vague theories or abstractions. However, without in any way attempting to compete with the large works or systems, it is sufficiently comprehensive.

If the medical student or the general practitioner is fortunate enough to get into his head most of its contents, it will be very well for his little patients.

The paper is excellent, and the type clear. The heavy black type headings of the paragraphs and the full index permit quick reference.

Doctor Zahorsky and the publishers should be well pleased with their offspring.

R. M. Pollitzer, M.D., F.A.A.P.

SURGICAL CLINICS OF NORTH AMERICA: Issued serially, one number every other month. Volume 15, Number 3. Chicago Number—June 1935. 239 pages with 119 illustrations. Per clinic year February 1935 to December 1935. Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1935.

There has been a marked change in policy in the publication of the clinics. The effort now will be to present in a very practical way write ups of clinics bearing directly on the daily work of the busy practitioner. This volume is evidence of the new idea. There is an admirable symposium on fractures as follows:

Kellogg Speed: Fracture of Head of the Fibula With Involvment of Pereneal Nerve; Delayed Radial Palsy.

David C. Strauss: Treatment of Fractures of the Femur in Children, with Special Reference to Russell Traction.

Hugh McKenna: Fractures of the Neck of the Femur; Fracture of Left Humerus; Comminuted Fracture Involving the Middle Third of the Right

Tibia and Fracture of the Left Fibula in the Same Position.

Frederick Christopher: Fracture-Dislocation of the Right Carpus; Smith-Petersen Operation for Ununited Fracture of the Neck of the Femur.

John D. Ellis: Fractures of the Sternum.

METHODS OF TREATMENT, By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, Kansas City General Hospital; Physician to St. Luke's Hospital, Kansas City, Missouri.

With Chapters on Special Subjects by H. C. Anderson, M.D.; Ursulla Brunner, R.N.; J. B. Cowherd, M.D.; Paul Gempel, M.D.; H. P. Kuhn, M.D.; Carl O. Rickter, M.D.; F. C. Neff, M.D.; E. H. Skinner, M.D.; E. R. DeWeese, M.D.; and O. R. Withers, M.D.

Fifth Edition. St. Louis, The C. V. Mosby Company, 1935.

This author is a gifted writer on most subjects and his presentation of practical methods of treatment herein described should prove helpful to the busy doctor. More than two hundred pages are devoted to drugs, one fourth of the book in fact. After all we have not yet reached the era of complete nihilism of such therapeutic resources however attractive the theory may be. A considerable section has been devoted to dietetics in the treatment of disease. This, too, is a good idea if not carried too far. Diet fads have done more harm than good. A creditable section is devoted to allergy but there are many other therapeutics suggestions in the book.

A TEXTBOOK OF BIOCHEMISTRY: Edited by Benjamin Harrow, Ph.D., Associate Professor of Chemistry, The City College, College of the City of New York and Carl P. Sherwin, M.D., Sc.D., Dr.P.H., LL.D. Member of the Staff of St. Vincent's Hospital and French Hospital, New York City. 797 pages with 52 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, $6.00 net.

This is an unusually important contribution. There are some thirty contributors representing many of the best laboratories of the world. Biochemistry has had such a spectacular period of development that the author found it necessary to seek the cooperation of many other men in the writing of the book.

PHYSICAL DIAGNOSIS, by Warren P. Elmer, B.S., M.D., Associate Professor of Clinical Medicine, Washington University School of Medicine; Assistant Physician to Barnes Hospital; Physician-in-Charge, Missouri Pacific Hospital; Consulting Physician to Jewish Hospital; Consulting Physician to Jewish Hospital, St. Louis, and St. Louis County Hospital, and W. D. Rose M.D., late Associate Professor of Medicine in the University of Arkansas, Little Rock, Arkansas.

Seventh Edition, St. Louis, The C. V. Mosby Company, 1935.

This is the seventh edition of this book. New matter has been added on aortic murmurs, silicosis, and diagnostic methods. The section on electrocardiography has been completely revised. There are many excellent illustrations.

1,000 QUESTIONS AND ANSWERS ON T. B., by Fred H. Heise, M.D., Medical Director Trudeau Sanatorium and Question Box Editor of Journal of the Outdoor Life.

A ready reference book for the tuberculosis patient, his family, and his friends. Published by Journal of the Outdoor Life, 50 West 50th Street, New York City.

This is a very valuable little book, authoritative in scope, with the following contents:

1. Heredity.
2. Predisposition.
3. Infection.
4. Immunity.
5. Relapse.
6. Symptoms.
7. Diagnosis.
8. Terms and Definitions.
9. Classification.
10. Cavity.
11. Treatment.
12. Surgical Treatment.
13. Laboratory Aids.
14. Bronchoscopy.
15. Associated Diseases.
16. Extrapulmonary Tuberculosis.

THE CRIPPLED AND THE DISABLED, Rehabilitation of the Physically Handicapped in the United States, by Henry H. Kessler, New York: Morningside Heights, Columbia University Press, 1935.

Fitting physically handicapped persons into the social and economic structure has become a major problem of modern machine civilization. Dr. Kessler's study, coming as it does in the midst of a great experiment in economic and social adjustment, brings this vital matter forcefully to the attention of the socially minded.

The popular belief that all disabled persons constitute a sheer economic waste is ably refuted. Physical limitations they may have, but, the author contends, the handicapped can be rehabilitated so as to become useful, self-supporting and responsible members of the community.

The policies and methods necessary to aid rehabilitation are therefore the key to the problem. The re-education of the community in its attitude towards this unfortunate group must be joined with legislative measures, Dr. Kessler holds. Legislation both more adequate and more uniform is

needed, so that all types of handicapped may be assisted by state or federal agencies set up to adjust these individuals to the occupations best suited to their specific disability.

The book contains a detailed study of disabled persons classified according to type: the child cripple, the military, industrial and chronic disabled, and the blind, deaf and dumb. There is also a most comprehensive critical evaluation of the laws pertaining to the subject. These together form the basis of a book which has much of solid value in it for students of politics, sociology, medicine and economics. The author is medical director of the New Jersey Rehabilitation Commission.

HUMAN ANATOMY, Double Dissection Method, by Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University.

First Dissection, New York: Morningside Heights, Columbia University Press.

Human Anatomy, Double Dissection Method, by Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University.

Second Dissection, New York: Morningside Heights, Columbia University Press, 1934.

Many medical schools, it appears, have been forced to encompass the study of anatomy in about one year. These requirements have necessitated marked changes in the methods of teaching in some of these schools, notably, the College of Physicians and Surgeons of Columbia University. These books have been written with a view to this newer plan. Some of the newer features of which are as follows:

1. Two dissections of the entire body, the first being restricted to the larger structures and visceral organs, and the second applying chiefly to the vascular and nervous systems with a review of the larger structures.

2. Arrangement of students in pairs (four to a table), the laboratory work being alternated equally between dissection and study of exposed structures.

3. Dissection restricted to a corresponding area on each side of the cadaver, and following a regional sequence.

4. Coordination of lectures with laboratory assignments, thereby avoiding discussion of structures with which the students are unfamiliar.

5. Use of specific directions for dissection and study in order to obtain maximum results within a limited period of time.

6. Dependence on mental receptivity of the students rather than on the didactic efforts of the teachers.

7. Periodic tests to enable students, as well as their teachers, to measure their accomplishments and progress.

THE DOCTOR'S BILL, by Hugh Cabot, with an introduction by A. Lawrence Lowell, New York: Morningside Heights, Columbia University Press.

The author has covered a wide field in the study of both the economic and scientific problems of medicine. The practice of medicine in many other countries as well as the United States has been touched upon more or less extensively. The present trends in the United States inspire considerable comment. A multitude of plans for providing people with doctors and hospital service have been brought under review. With one of the greatest group institutions in the world, the Mayo Clinic, naturally inclines him to favor some such type of practice for this country. At best the book offers no panacea or way out for the care and treatment of all the sick people of the United States. It should prove helpful, however, as a study in one volume of economic conditions in medicine and direct those so inclined toward more extensive investigations. The title of this book has been well chosen since it is a publication for both the doctor and his patient. The movement now gaining ground rapidly to provide a course on economics in every medical school has much to commend it. While the author points out some inherent weaknesses of medical organizations to provide the necessary leadership in economic problems it is not likely that any other plan will offer so much encouragement. It would be foolish to surrender this leadership to the layman though of course the author does not advocate this but there are people who do and the profession should continue to make a bold stand against this and such a stand can best be made by organized medicine.

MINUTES

(Continued from page 136)

the call is urgent even to the smallest county medical society.

The record of the State Medical Association for the past year along all lines has been encouraging. The membership has increased—the total paid up members numbering 689 with an accredited enrollment by the American Medical Association of 895.

The finances of the Association and Journal improved, and a reserve fund is being accumulated again.

The Association has always been interested in the reduction of the maternal and infant mortality in South Carolina, but on April 15 at Anderson inaugurated a post graduate obstetrical institute by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia, who represents the Children's Bureau of the United States. These lectures will be given in various parts of the State during the year.

As one result of the enthusiasm engendered it was decided by the nearly one hundred doctors attending the Post Graduate Institute at Anderson to enlarge the idea of a post graduate course to include other branches of medicine beginning in the late summer or fall, and if possible to stimulate similar ventures in other parts of the State. This idea is now fostered by State Medical Associations all over the country, thus bringing post graduate instruction to the doctor who is often unable to leave his practice and go to the medical centers for this purpose. I am profoundly grateful for the cooperation of the medical profession of South Carolina for these twenty five years of loyalty and support.

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Laryngoscope, 1935, XLV, 149-154★

SEE ALSO
Pharmacology of Inflammation: III. Influence of hygroscopic agents on irritation from cigarette smoke.
Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245★

The results reported in these papers find a practical application in Philip Morris cigarettes, in which only diethylene glycol is used as the hygroscopic agent. To any Doctor who wishes to test them for himself, the Philip Morris Company will gladly mail a sufficient sample on request below. ★★

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★★ Two packages of Philip Morris English Blend cigarettes. ☐

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HEAT STERILIZATION— A BASIC PRINCIPLE OF CANNING

● The Frenchman, Appert, is given credit for the first application of heat sterilization as a means of food preservation.

Competing for a prize of 12,000 francs offered by Napoleon for the most practical method of food preservation for blockaded France, Appert, in 1804, laid the foundations of the modern canning industry. So successful were his limited efforts that a contemporary food critic has stated that Appert's products recalled "the month of May in the heart of winter."

In the first English edition of his text (1) Appert propounds his conviction:

> "That the application of fire in a manner variously adapted to various substances, after having with the utmost care and as completely as possible, deprived them of all contact with the air, effects a perfect preservation of those same productions, with all their natural qualities."

Appert's findings were made empirically years before the true causes of food spoilage were known. Today, it is evident that the success of his procedure was due to heat destruction of spoilage micro-organisms, such as are associated with raw foods, and protection from subsequent contamination by such organisms.

The sterilization procedure, or the "process" as it is termed in the industry, is an integral part of commercial canning. Essentially, it involves the heat treatment of foods sealed in hermetic containers after proper preparation; the preparatory procedures accomplishing, among other things, the removal of most of the air from the can.

The time and temperature required for sterilization of a food are dependent upon many factors. The establishment of proper processes for canned foods is not a haphazard procedure; scientific methods constantly refined during the past two decades serve to determine the times and temperatures which must be used.

The findings of the physical chemist as to the rate of penetration of heat into the food are combined mathematically with data obtained by the bacteriologist on the thermal resistance of spoilage micro-organisms (2).

From this calculation are determined the proper processes necessary to destroy spore-forming spoilage bacteria whose thermal resistance are much greater than those of the pathogens.

Selected raw material, proper preparation, and scientifically determined methods of heat sterilization have combined to insure that canned foods as a class are among the most wholesome foods coming to the American table (3).

AMERICAN CAN COMPANY

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(1) The Art of Preserving, M. Appert, Black, Parry and Kingsbury, London, 1811.

(2) Thermal Process Time for Canned Foods, C. O. Ball, Natl. Res. Council Bulletin, v. 7 No. 37, 1923

(3) Preventive Medicine and Hygiene, M. J. Rosenau, Appleton-Century, N. Y. 5th Ed. 1927.

This is the third in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

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THE PEDIATRICIAN LOOKS AT THE TONSIL

By

R. M. POLLITZER, M.D.,
Greenville, S. C.

In this brief paper an attempt will be made to present for your consideration, the present day conception of many pediatricians, and particularly those of the S. C. Pediatric Society, concerning the tonsil, and its relation to the child. Of course as an exponent of a group it is an easy matter to differ in unessentials, or perhaps be a bit too radical. So I must beg your and their indulgence, should I utter what you may regard as heresy. Nevertheless I trust that in the main, I shall succeed in giving to you what they have in mind.

However before stating our position, it would not be amiss to express what I think is the common view-point of others. By so doing you may note certain differences which should be illuminating and perhaps of interest. The average mother for instance, having heard about tonsillectomies from her friends, rather expects that some doctor, sooner or later will demand this sacrifice. As a rule, she is not surprised and quite often, even makes the suggestion. The father considers the whole matter as just another fad, and an excellent way for the doctor to get more revenue.

The anatomist tells us that there are three kinds of tonsils, and that the faucial tonsil is an encapsulated, ductless gland, having many crypts, and being rich in blood vessels. Its size is very variable, but its position fixed. The physiologist admits his ignorance of the function of the tonsil, no one having yet discovered an internal secretion; but he is of the opinion that within the crypts, the normal tonsil in some way destroys bacteria which have entered. The pathologist confirms this, but adds that often in consequence of disease or injury, the tonsil can no longer kill these germs, and ceases to be a protective organ. Analogously to a diseased appendix, thyroid, or gall-bladder it becomes a menace. "It has been shown by Davis, Tongs, and many others that the tonsils harbor the streptococcus hemolyticus in 90 per cent of all cases demanding removal." (Griffith & Mitchell, p. 540).

The average doctor or perhaps the doctor who is below the average, commonly in groping about for some cause of malnutrition, loss of appetite, enuresis, epilepsy or what-not, suggests that the tonsils should be removed.

As a rule he is really anxious to render some service, but a complete physical examination is time consuming. A blood study or other more refined tests, as a basal metabolic rate, or radiographic examination, etc., etc., cost money. The mother only too often is over-anxious to find a short cut to the child's health. She wants something done now. So the doctor then and there says "The tonsils must come out."

I have heard it stated, that the chief indication for a tonsillectomy is the presence of the tonsils. Also it is often argued that inasmuch as the tonsils may be the basis for ill-health, it's only right to remove them and see whether improvement does not follow. This of course does not constitute the best type of practice; for its nothing more nor less than guess work, at the expense of the patient. It would be a misstatement to say that no tonsils should be removed, and just as great an error to advise the removal of all tonsils. The thing that each and all of us should realize is that there is today amongst us, not enough judgment or discrimination used in the condemnation of tonsils. Not

Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

very many doctors are mercenary, though some of course place the fee far ahead of the patient's welfare. Nor do all laryngologists advise tonsillectomy in every child. But a considerable number of them weakly yield to the importunities of the family doctor who is referring the patient. That is they do not assert themselves for fear of losing the good-will of the doctor, or at times operate on his say so, hoping that he knows best. This acquiescence is often a grievous mistake. Of course the same failing is found in other specialties too, but at this moment they are not under discussion.

Having talked to you about mistakes and bad practice, it's now high time to outline what the pediatrician thinks of the tonsil. The subject is pretty well settled in our minds and we believe that certain fundamentals are firmly established. There are several things about children and their tonsils that should be clearly understood. To begin with there are but two common conditions of prime importance, though of course there are many others such as Vincent's Infection, Diphtheria, Scarlet Fever, etc., etc., which time will not permit of inclusion herein.

These two are follicular or lacunar tonsillitis and hypertrophy or hyperplasia of the tonsils.

Tonsillitis is extremely common at all ages, but especially so in childhood. Contrary to most text-books, in my experience it has not been rare during infancy. Exposure to cold and to wet, and particularly long automobile trips are factors. Contagion has a part. Undoubtedly some children are predisposed. The attack begins with chilliness and malaise. Often, indeed as a rule, there is vomiting, and fairly often diarrhea. That is, there is a systemic toxemia, which early affects the child's gastro-intestinal system. The cervical lymph nodes may be somewhat enlarged, but this is not constant. At times there is abdominal pain, which often leads to a mistake in diagnosis. Pain on swallowing may be present, but is variable with the individual and the degree or type of infection. History here is of little importance; for children will not admit having a sore-throat for fear of the examination, which they greatly dread. Nothing can take the place of a proper throat examination, made with a tongue depressor, in a good light, while the patient is firmly held. A blanket or sheet may be necessary. A poor examination is worse than none. As a rule the tonsils when involved are swollen, deep red, and generally have a few or many whitish or yellowish soft spots or plaques irregularly placed on its surface, or protruding from the crypts. At times these are large and seem to merge. The temperature generally is elevated, ranging from 101 to 105. The disease lasts about a week. Albumin in the urine is not uncommon, and blood microscopically is not rare. Occasionally acute nephritis develops. However the average doctor does not do a urinalysis in all his patients who have tonsillitis. Nevertheless F. D. Murphy (Med. Clinics of N. Amer., March 1935) says that "No longer can scarlet fever be looked upon as the chief cause of acute glomerular nephritis. Investigation by many shows that tonsillitis, the common cold and sore throat outstrip it as the chief etiologic factors."

Not uncommonly a soft cardiac murmur is heard. This generally disappears. However endocarditis or valvulitis, may date from one or several such attacks. Several instances of this have come under my observation. The diagnosis is purely an anatomical one. Most often a culture is not necessary, but at times absolutely essential, for the exclusion of diphtheria, etc. In my practice which has dealt with infants and children exclusively for a good many years, the finding of tonsillitis in infants between seven months and one year, has been extremely frequent. I am refraining from saying almost daily. Nearly always the diagnosis of teething or some digestive upset has been made by the mother. At times the infant is referred by a doctor because of the vomiting or diarrhea, with the request that he or she be put on a suitable diet. The diagnosis of tonsillitis, in my opinion is missed oftener by the doctor and the mother, than any other with the possible exception of otitis media. Where there is vomiting or diarrhea, and even with abdominal pain not infrequently calomel or castor oil has already been given.

Tonsillitis is of course very common in older children, too. They may complain of sore throat, and of being sick all over, but history can not always be relied on, even then.

There is no question but that repeated attacks of tonsillitis seriously injure the tonsil, and are a menace to the child's health. Further it is probably the chief factor in hypertrophy of the tonsil. Diet we know is also of importance in lessening resistance to attacks. Mention has already been made, that removal of the tonsils is a very frequent procedure. But it is surprising to learn according to Collins and Sydenstricker, that of all the surgical operations in the cities of the U. S. 1/3 are for removal of the tonsils and adenoids. Before hastily expressing condemnation of this high operative figure, let us briefly review the major indications and contra-indications to this surgical procedure.

In brief, it may be said that diseased or obstructive tonsils, not merely large tonsils (other things being favorable) should be removed. This of course is a generality, and needs a bit of explanation. First when is the tonsil diseased? "Repeated attacks of tonsillitis, increasing in severity, with or without systemic disturbance indicate disease." "Next, repeated attacks of tonsillitis with systemic manifestation, where the focus can not be otherwise located, should make one suspicious of the tonsil." However there is no evidence to support the common practice of removal of tonsils for a susceptibility to head colds, frequent sore throat, croup or asthma. Asthma is often thereby aggravated. "Further, continuous or prolonged enlargement of the anterior cervical lymph nodes, with repeated attacks of tonsillitis, and without any other demonstrable cause mean tonsillar disease." Mere enlargement or prominence without disturbance of breathing, without glandular enlargement, and no history of disease is a contraindication to removal.

However tonsils large enough to be obstructive to breathing, and especially the adenoids, should be removed. Where an infant has had several attacks of otitis media, an adenoidectomy must be done. There is no reason why one must operate on both tonsils and adenoids. Little ones if possible should retain their tonsils for several years. Whether the tonsils or the adenoids or both should be removed, requires more than a hasty glance. The pros and cons in each case should be weighed. However as a guide, Griffith and Mitchell in their text-book list the following as indications for surgery—"Several attacks of tonsillitis, not lessening in severity; one attack of peritonsillar abscess, several attacks of otitis, and otherwise unexplained nephritis, arthritis, pyelitis, or marked respiratory obstruction."

Kaiser of Rochester, N. Y. in a study based on 20,000 tonsillectomized children and 28,000 children who still had their tonsils, concluded that the tonsil is a factor in the causation of rheumatic fever, scarlet fever and chronic heart disease. However removal of tonsils influences unfavorably the incidence of the following:—bronchitis, pneumonia and sinusitis.

In a later study based on 4,400 control children, he found that nephritis occurred only one third as often, in children whose tonsils had been enucleated. Also dental infection was noted in only half as many who had no tonsils. However there was practically no difference in the incidence of malnutrition, nor in that of tuberculosis. This is striking, because most men operate because of malnutrition.

Granting then, that some tonsils should be removed, when and at what age should this be done? The operation should not be done during an acute illness, or attack of tonsillitis, nor until at least two weeks have elapsed. The best season is that time of the year when we are free from cold weather, from much rain or strong winds; for the little patient is going to be more exposed to these for several weeks, and sinus involvement is not an uncommon sequel. However if it be imperative, weather and age must be waived. Where the child is being seriously damaged or delay is considered dangerous, the tonsils may be removed even during the first year. But where it is advisable three years is the minimum age for tonsillectomy. As it is very rarely necessary to operate on a certain fixed day, where the patient is anemic or otherwise in poor condition, one should attempt by diet, drugs, or transfusion to fortify the child.

It is almost criminal to enter on this type of surgery without previously having had a urinalysis. I have known of two children who died in diabetic coma, because the urine was not examined prior to the anesthetic. Further there have been some deaths from hemorrhage, which might have been prevented. It is inexcusable to operate without first determining the clotting

time. Cases of leukemia have had their tonsils removed, and then soon after had that diagnosis made. In brief we might say that before doing a tonsillectomy, the minimum requirements are:—a careful history, a thorough physical examination of the whole child, along with a urinalysis and a blood-study. This last includes a leucocyte count, a differential count, a hemoglobin estimation, and test for coagulability. Other procedures or methods of investigation may be helpful, but these are prerequisite. The question of thymic hyperplasia is purposely being avoided. The operation while simple is not infrequently done by untrained men or for one reason or another in poor fashion. Rhoads and Dick found in examining 403 patients that in 73 per cent small pieces of tonsillar tissue had been left. These are potential sources of danger. Needless to remark the anaesthetic and the anaesthetist are very important factors in the case. After a tonsillectomy for several days, say three at least, the patient should be kept in bed, and for several weeks after that, he should be carefully protected from undue exposure, and guarded from acute infections. Parents should be warned that improvement will not be evident within a few days, perhaps not for several months.

Nor should they be led to expect the cure of idiocy, epilepsy, enuresis, and many other chronic ills. But in general the child having been carefully studied; where the operation is indicated then properly done under a satisfactory and safe anaesthetic; in the vast majority of instances, marked improvement is brought about.

Therefore while thoroughly and most heartily deprecating the number of unnecessary and thoughtless tonsillectomies that are being done every day, yet nothing in this paper should be construed or is intended as a condemnation of the operation when indicated and done by skilled men.

DISCUSSION

Dr. D. L. Smith, Spartanburg:

We do not expect to settle this question of the tonsils, by any means, but I wish you all could have been present at the meeting of the South Carolina Pediatric Association and heard the discussion led by Dr. Mitchell, of Memphis, Tennessee, in February. There were a small group of pediatricians and a few of the otolaryngologists present, and we took up this tonsil question. It was upon my motion, after a discussion of two and a half or three hours, that Dr. Pollitzer was elected to appear before you today with this paper, and I think he has covered the subject most excellently from our point of view. I feel sure that you are going to have several views on the subject today, and I think the discussion will be well worth while.

The first thing that I want to bring out or accentuate or impress upon you is the thorough physical examination of the child before the removal of tonsils. I think the thorough physical examination of all children before the removal of tonsils is a very necessary thing. Frequently the tonsils are comdemned when the child has other defects, the correction of which would relieve the child and the tonsils would not have to be removed. In teaching and in my own work I feel that the tonsils should be the last thing that we examine in the child. We should make a thorough physical examination of the child before we ever look at the tonsils, so as not to have that influence on our mind in the physical examination of the child.

Then I think that no child should have the tonsils removed on one examination of the tonsils. Frequently we might change our minds if we were to see that child two weeks later.

The next point I want to emphasize is that we are guilty, frequently, of indiscriminate removal of tonsils on only the recommendation of the school nurse. The school nurse goes around and looks at the tonsils and condemns them, the parents are thoroughly educated, and the tonsils are removed. That is being done in South Carolina and done frequently.

I am happy to say that the otolaryngologists are cooperating in South Carolina and are having more physical examinations done now than in former years. Five years ago and ten years ago and many even today are removing the tonsils without the thorough physical checking up that we feel is necessary.

I think the tonsil has a definite mission in the body. If possible, it is very desirable that the child retain his tonsils until the second year, or the first year, at least, of school life. If it is possible to carry that child through with his tonsils until the second year, or the first year of school life, where he comes into contact with school diseases, it is very desirable.

I disagree with Dr. Pollitzer that repeated attacks of acute tonsillitis are always an indication for removal of the tonsils. I have seen so many children who have had their tonsils removed because of repeated acute upper respiratory infections, and those children have these acute respiratory infections right on.. The removal of the tonsils does not prevent that.

We look for thorough discussion of this paper today, and, if permitted, I should like to answer some of the discussions.

Dr. C. L. Kibler, Columbia:

I wish I, as a laryngologist, could write as good a paper as the pediatrician has written, or could write a paper on pyelitis or some of the other childhood diseases and be as versatile as Dr. Pollitzer. He has written a very valuable paper, filled with splendid advice and timely warnings.

I shall have to take issue with Dr. Smith when he says that in children who have had repeated attacks of tonsillitis there is no indication that those tonsils should be removed. As we know, acute tonsillitis is a serious disease, not only among children but among old people. Old people are subject to acute tonsillitis, with the temperature running to 103 to 105, just as children. We know it is often the forerunner of an acute rheumatic condition or of a heart complication. That being the case, why not remove the tonsils in these children who have had several attacks of acute tonsillitis as a preventative of an endocarditis or other serious complications? It looks to me like a sensible thing to do.

It has always been controversial when to remove tonsils, especially in children. It matters not how old or young a child may be, whether one year old or ten years old, if there is a specific reason for the tonsils to be removed, after having had a thorough physical examination and eliminated everything else and know the tonsils are a focus of infection, then I think they should be removed.

The baby specialists have gone into this subject thoroughly, and there is not much left for the otolaryngologist. They can do much of the work just as well, such as a myringotomy or adenoidectomy as the laryngologist. And the optometrists have taken over a large part of the eye work. If the baby specialists will just let us continue to remove tonsils we shall be grateful. However, the pediatricians play an important role as to diagnosis, and we must rely on theme in a great measure as to proper treatment, operative or otherwise.

I have a good point to make. I have a sign that indicates to me when the tonsils are infected and should be removed, and it has stood me in good stead. I do not know whether I got it from the literature or from experience. That is, when you look into the throat, it matters not whether it is a small tonsil or a large tonsil, whether it is imbedded or not, whether it has crypts from which you can squeeze out debris, pus, etc. it matters not. But if you have a red line running all the way down on the external pillar, the tonsil is diseased. It is evidence of deep infection, and I would unhesitatingly say, remove them.

Dr. E. W. Carpenter, Greenville:

The baby, when it comes into the world, is very much like the Eskimo; that is, it has never been in contact with civilization. The Eskimo that has never been in contact with civilization, if landed in New York City, will likely die of pneumonia or tuberculosis. They have never been immunized. In talking about the tonsils, we often lose sight of the fact that they are only a part of the lymphatic ring, which is a mass of lymphatic tissue composed of several units.

There is no use to talk about tonsils, tonsils, tonsils when you have much more involved than the tonsils. You have an enormous area in Waldeyer's ring for the entry of organisms. I believe the entrance of organisms through these portals is beneficent, because this stimulates immunity. The baby could not live unless more or less immunity were established. It requires a different immunity for organisms in different parts of the world, so there is no autocratic set-up as to when you should remove the tonsils. If the baby does not respond, if the child's antibodies do not form and the child is being overwhelmed with a toxemia or a blood-stream infection, remove the source. Surgeons take out the appendix for catarrhal appendicitis; they do not wait for a catastrophe; they do not wait for it to rupture. There is no hard and fast rule as to when to take out the tonsils or when to take out the adenoids; it takes a good doctor, using horse sense, to know when to operate and when not to. You may send a baby home today with innocent-looking tonsils and say "Watch this baby," and in two weeks it has nephritis. If the nephritis is controlled in a reasonable time you remove the tonsils; if the nephritis is progressive you also remove them.

Dr. J. W. Jervey, Jr., Greenville:

I want to thank Dr. Pollitzer. He has covered this subject completely, and I find myself in almost complete accord with what he has said and what others have said here today. I do, however, feel it incumbent upon me to rise at this time in defense of my own specialty of otolaryngology. It would seem, from the implications, that we have been rather remiss in the preparation of our patients; and I want to try to make you feel what I most earnestly feel—that there is a vast difference in the work in tonsillectomy and adenoidectomy that is being done by the first-class otolaryngologist and the same type of work that is being attempted by almost anyone who during his hospital internship has seen or done a tonsillectomy. No one can tell me that a man with insufficient training can remove a pair of tonsils cleanly and adequately and go into the nasal pharynx and remove an adenoid completely, cleanly, and not dangerously. No one can do that who has not had considerable experience. Even those of us who are doing this work all the time and who have had special training find it at times exceedingly difficult, and it is my earnest belief that a good deal of the criticism that has come upon tonsil and adenoid operations is the result of poor work and the vast majority of it by men who are not capable of doing good work. There is a tendency for the pediatrician to enter this field; why I do not know. I shall not attempt to say; I leave it to your own judgment.

I do not believe most of us operate because of

malnutrition. And I do not believe that the otolaryngologist in South Carolina is today removing tonsils upon the advice of the school nurse.

I was glad to hear Dr. Pollitzer mention the automobile. I think some five years ago, here upon this floor, I mentioned that as one of the worst evils of the present age. I do believe that the automobile, for children, is one of the worst of modern inventions.

There is one thing I should like to say I do consider as a contraindication for tonsillectomy, and that is, as Dr. Carpenter mentioned, hypertrophy of the lymphatic tissue in the lymphoid ring. When I see hypertrophy of all that tissue I do not believe that tonsillectomy will accomplish the desired result.

Dr. M. R. Mobley, Florence:

I wish also to express my appreciation to Dr. Pollitzer for this report. The longer one is privileged to practice medicine, the more he should be impressed that the doctor is in a position of trust; and the doctor who would lightly betray this trust for any reason except the well being of his patient to me is reprehensible. The unfortunate thing about this operation of tonsillectomy and adenoidectomy is that it has fallen into disrepute. It has unfortunately been placed in the ten-, twenty-, and thirty-cent store scale. It has unfortunately been done by many otolaryngologists of incompetent training and not infrequently by men who have had no training. So it is not wonderful that it has fallen into disrepute.

Most of you gentlemen have children; most of you are fathers. Let's bring this thing home to ourselves. If your little girl comes home from school with a note saying her tonsils should come out, do you telephone to an otolaryngologist and say: "I want you to take my child's tonsils out"? No; you take that child to an otolaryngologist who you feel has good judgment and who you feel will go into that case thoroughly. Gentlemen, it requires a good deal of judgment, I think, to tell when a tonsil should come out and when it should stay in. The tonsil, as Dr. Carpenter has said to you, is one of the chief immunizing organs of the body. A child coming into this world needs all the immunizing forces he can get, and anyone who advises removal of that tonsil needlessly is thoughtlessly jeopardizing the life of that child. But when that tonsil becomes so infected that it acts as a focus of infection from which bacteria can be disseminated to the various organs of the body, then is the time to remove that tonsil, and not until then.

I think every case should be looked into very carefully. Sit down and talk to the mother of that child. Find out just what that child's symptoms are. After going into the case very thoroughly, finding out whether the child has frequent respiratory infections, frequent flare-ups of temperature, earache, "growing pains", as the mother calls them, then, at the same time, making very pleasant overtures to the child, assuring it that you are no bear, taking it into your lap, talking to it, then you can very easily get a thorough examination; but if you fly at that child with a tongue depressor by the time it enters your office, then the examination you get is going to be largely a hit-and-miss matter.

I feel that under no circumstances should tonsils be removed unless there is a very definite indication for it. But when that indication has been established, regardless of that patient's age, I think if it is a positive indication the tonsils should be removed. Would you take a ten-months-old girl baby who is suffering from a severe attack of pyelitis and say that, because of that girl's age, you will not remove the tonsils? Determine the indications, and then, regardless of the age, if there are positive indications remove the tonsils.

Dr. H. L. Timmons, Columbia:

I think this discussion is unfortunate, as the public might think there is a great controversy here between the pediatrician and the laryngologist. This is not true. The pediatrician is working for the good of his patient, just as the laryngologist is doing. They want things done that will help the children; we want things done that will help the children, or the patients. We are trying to come to a conclusion as to when tonsils should be removed.

I have great respect for the man reading this paper. I think we have no better pediatrician in the State, and I do not want the men to go back home thinking Dr. Pollitzer said no tonsils should be removed. He does not mean that, I know. There are two points he has made to which I agree in every respect. That is close and careful physical examination and examination of the urine and blood. The other is as to the age. Statistics show, as he has given, that if a child's adenoids and tonsils be removed at too early an age the child is more susceptible to bronchitis and pneumonia. But what are you going to do with a child that has had repeated attacks of tonsillitis? Are you going to see that child and say it has tonsillitis and swab out the child's throat, and in thirty to sixty days you go back, and the child has another attack of tonsillitis? You think you possibly might have a specialist see the child and see if the tonsils need removing, but you postpone it. Two or three months later the child has another attack; then you find a heart lesion. Gentlemen, is that the kind of medicine we want to practice? No! Many a child has developed a valve lesion because of the infection traveling to the heart. It takes a competent man to look at tonsils and tell whether they should be removed. Just because the tonsils are red and the throat is red all over, that does not mean a tonsillectomy. There are definite signs and symptoms, and to know these symptoms you have to have had training. Just as I would send a child with scarlet fever to the pediatrician, so I would send a child with tonsils to the otolaryngologist.

Dr. Pollitzer, Closing Discussion:

First of all I wish to thank each and all of you

who have so kindly discussed this paper, and the others for their very patient attention. The subject is one that is in some respects highly debatable, and I am not the least surprised that some points of difference have been brought out. On the contrary, it seems to me remarkable that on the whole there should be so much unanimity.

Dr. E. W. Carpenter's remarks about immunity are very true. Dr. J. W. Jervey, Jr., has emphasized very properly the difference between the work done by trained and untrained men. Dr. D. L. Smith in deploring the hasty work done by tonsil clinics and public health workers is eminently correct. I beg to differ from one of the discussors in fearing the effects of this paper if reported by newspapers. In fact it seems that the profession and particularly the nose and throat man will gain rather than lose if the public is informed.

And so, I wish to close by repeating for the sake of the press my last paragraph:—

"Therefore while thoroughly and most heartily deprecating the number of unnecessary and thoughtless tonsillectomies that are being done every day, yet nothing in this paper should be construed or is intended as a condemnation of the operation when indicated and done by a skilled man."

DIFFERENTIAL DIAGNOSIS OF BRIGHTS DISEASE

By

JAMES A. BRADLEY, M.D.,
Florence, S. C.

Brights Disease is defined by Dorland(1) as "any one of a group of kidney diseases attended by albuminuria."

In the present paper we will omit those rarer renal conditions such as abscesses, cysts, new growths, etc., and confine ourselves to the disease as it presents a general involvement of the parenchyma of both kidneys.

Due to the numerous vagaries of a clinical classification as advocated by Christian(2) and to Browning's(3) suggestion of a functional classification; we favor the pathological type of classification advocated by Volhard and Fahr (4), Van Slyke(5), Addis and Oliver(6) and numerous other authors.

1. HEMORRHAGIC BRIGHTS DISEASE (Glomerulo Nephritis)
   - a. Acute
   - b. Subacute
   - c. Chronic
   - d. Terminal
2. NON HEMORRHAGIC BRIGHTS DISEASE
   - A. Arteriolosclerotic Brights Disease
   - B. Degenerated Brights Disease (Tubular Nephritis and Nephrosis).

In accepting this classification one must bear in mind that rarely do we have one portion of the renal unit affected without the other parts becoming involved. Therefore our diagnostic terms indicate only the portion showing the major damage.

Before discussing these various conditions, let us remember that the renal unit begins with an afferent vessel breaking suddenly into a capillary bunch, the glomerulus, which is separated from the exterior of the body only by a microscopical thin membrane forming Bowman's capsule. These capillaries join together to form the efferent vessel which passes on to the proximal convoluted tubules.

As the urine passes from Bowman's capsule it, generally speaking, passes through the proximal convoluted tubule, the descending and ascending limbs of Henle, the distal convoluted tubules, and on into the collecting tubules and renal pelvis. The blood vessels, of course, come from the renal arcuate arteries and veins.

A physiological consideration of this anatomical arrangement aids in the understanding of why a disease involving the glomerules would show red blood cells in the urine, and a disease of the arteries or arterioles would lead to hypertension. Also, in view of the part the tubules play in the albumin secretion, or excretion, we would expect a disease of this portion to show excess albuminuria.

For simplification of differential diagnosis we may omit many of the clinical symptoms with which we are all familiar and consider the following as:

1. DIAGNOSTIC DATA NEEDED
   - A. Hematuria
     Indicates glomerular involvement
   - B. Albuminuria
     Indicates Tubular involvement
   - C. Edema
     Indicates Tubular involvement
     Edema increases with the loss of proteins from the blood in the form of albuminuria. Lepore(7) considers the edema in a hypoprotenic as a

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Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

sodium chloride edema which is increased with sodium chloride and fluid intake.

D. Hypertension
Indicates roughly the amount of vascular involvement.

E. Microscopic findings of red blood cells, casts, etc., in the urine.

2. DESIRABLE DATA
A. Mosenthal Test
B. Concentration or Dilution Tests
C. Phenolsulphonephthalein Test (P. S. P.) (9).
D. Blood Urea Clearance(12)(13)
E. Blood Creatinine Clearance(8)
F. Blood Plasma Proteins(13).

1. HEMORRHAGIC BRIGHTS DISEASE

The chief *significant points* of Glomerular or Hemorrhagic Brights Disease are a local, focal, or general infection of streptococcic origin, with profuse, chronic, or intermittent hematuria, moderate hypertension with blood pressure not over 170 systolic, and in the acute or advanced stage nitrogen retention. The *albuminuria* and edema vary with the amount of associated tubular damage. *Urinary* casts of the hyaline, granular, epithelial and blood varities may be found in all stages with a broad renal failure cast present in the terminal stage.

The *usual course* is usually one of an acute onset which may terminate fatally or pass through the subacute and chronic to the terminal stage. The *end results* are either cure or death from terminal nephritis.

The *autopsy* findings are a small or large granular, white kidney showing on microscopic examination marked glomerular destruction of both the intra and extra capillary type. There is a varying degree of destruction of the tubules as well as of the arteries and arterioles.

2. NON HEMORRHAGIC BRIGHTS DISEASE

We have two types of Non Hemorrhagic Brights Disease. (A) Arteriosclerotic or Arteriolosclerotic Brights Disease and (B) Tubular or Degenerative Brights Disease.

While the exact *etiology* of the Arteriolosclerotic type is unknown, we must consider all infections, endocrine, or metabolic diseases, and endogenous or exgenous intoxications as the probable cause.

The chief *significant points* are a marked hypertension, with a blood pressure of 150 to 200 or more systolic, which usually precedes any serious signs of renal diseases. There is little or no edema or albuminuria of renal origin, though there may be some due to cardiac failure. The microscopic *urine* shows no red blood cells, but usually some casts, chiefly of the hyaline variety.

The *Usual Course* presents an insidious onset with subsequent nocturia, cardiac edema (when present) and marked hypertension, which may be benign, or if associated with glomerulonephritis it may be of a malignant character. The *end results* are death from uremia, cardiac failure, or apoplexy.

The *autopsy* findings reveal a deeply scarred, small, granular, red kidney which on microscopic study presents a varying degree of damage characterized by endarteritis and hyperplasia of the intima with contracted lumina, resulting in a varying degree of necrosis and fatty degeneration.

B. Degenerative Brights Disease

The third type of renal lesion or the second Non Hemorrhagic type for our consideration is that group termed Degenerative Brights Disease by Addis(6) or Nephrosis by Volhard and Fahr(4).

This type of kidney disease is *usually due to* toxins of an infectious, endogenous, exogenous, or cachexic origin being excreted or secreted through the tubules which show the predominant damages in this case.

The usual infectious toxins are the result of chronic diseases as tuberculosis, syphilis, chronic suppurative or focal processes, or to all contagious diseases as measles, diphtheria, etc. The endogenous intoxications are chiefly pregnancy or jaundice, while the exogenous intoxications may be a prolonged high protein diet(10), metalic poisons as mercury, or medicinal renal irritants as turpentine, cantharidin, carbolic acid, etc. Of the cachexic toxins, malignant tumors are the main offenders.

The chief *significant points* are marked edema and marked albuminuria without hematuria or hypertension, except in the case of pregnancy, when McCann(11) considers hypertension a prominent symptom.

The *urine findings* show a marked amount of albumin with no red blood cells, but with casts

chiefly of the hyaline type, and a few of the fatty, granular, epithelial and waxy varieties, while there are broad renal failure casts in the terminal uremic stage. In addition to casts, on microscopic examination we frequently find characteristic double refracting globules.

The *usual course* is an acute or insidious onset with the subsequent symptoms as noted, e.g., marked edema and albuminuria without hypertension.

The *terminal results* are either cure or death from an intercurrent infection or from uremia.

The *autopsy* findings show grossly a large, soft, white or bile stained kidney, with microscopic evidence of markedly degenerated tubules and varying amount of amyloid or hyaline degeneration of the glomeruli. In the amyloid degeneration the arteriolar walls are infiltrated with amyloid material.

We have purposely omitted reference to the diagnostic value of the data desirable for diagnosis, as those tests such as Mosenthal concentration and dilution tests, and the phenolsulphonephthalein test, are widely understood, and other data as blood urea or creatinine clearance and blood plasma proteins are not easily available for the general practitioner.

RESUME

1. Hematuria and moderate hypertension indicate glomerular damage.

2. Marked hypertension with no red blood cells and only a small amount of albumin indicates renal arteriole damage.

3. Marked albuminuria and marked edema without hypertension indicate tubular damage.

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DISCUSSION

Dr. J. H. Cannon, Charleston:

I think Dr. Bradley has given us an excellent presentation of the picture commonly spoken of as Bright's disease. Particularly commendable, it seems to me, is the fact that he has emphasized the correlation of the clinical picture based on the damage done in the kidney. I think that can not be emphasized too much. He has pictured for us the recognition of these conditions where (if one can imagine, and we see it sometimes) the picture is clear-cut, as it would look to be from his paper, although he called to our attention that it is rarely the case. We have a picture in our mind that the lesion from which the patient is suffering has not damaged any single portion of the kidney but is more or less a diffuse nephritis. Therefore the picture is bound to be obscure; rarely is there a purely glomerular lesion or a purely tubular damage. In addition to that, when there is added cardiac failure, we have other factors that confuse the picture. In cases where ordinarily we would have only a trace of albumin, we now have quite a quantity of albumin and casts, with hypertension. It is my experience that always with these patients it tends to be spoken of as nephritis, regardless how much or how little may have been known of the patient previously, because of the fact that at the time the patient comes under observation there is heart failure, edema dependent upon the heart failure, with marked hypertension, and this condition is always spoken of as Bright's disease; whereas hypertension with passive congestion of the kidney is the more correct description.

I am particularly interested in hearing the paper today by Dr. Stander on nephritis in pregnancy. Not infrequently we are called in the City Hospital to see cases on the obstetrical service, cases with heart failure and associated renal damage. Here, again, we have an additional factor in these cases to complicate the situation. Just how shall they be classified (and there are various classifications there) in an attempt to make the picture a little clearer? I think the classification by (the name has slipped me for the moment), at the Mayo Clinic, is very practical. He feels that the vast majority of the kidney lesions, or lesions found during pregnancy, can be classified according to Volhard and Fahr, with the supper-added strain of the pregnancy; and that seems to hold good so far as I have been able to determine. So often those cases have a story of previous damage,

damage in a previous pregnancy, a history of hypertension, which gives us a hook on which to hang the diagnosis.

I have certainly enjoyed the doctor's paper very much.

Dr. Wm. R. Barron, Columbia:

I want to bring out two points in this that are quite enlightening to me. In estimating kidney function, using the phenolsulphonephthalein test, there are some types of nephritis which will show a hypersecretion of phenolsulphonethalein. We may be misled by this.

The other type of nephritis is the type in which most of these symptoms the Doctor has mentioned and most of these findings, will be absent, and the phenolsulphonethalein test will give us possibly the only clue to the amount of nephritis we are dealing with. I had an internist ask me to cystoscope an old lady because he found a few pus cells in her urine. I went ahead and did it, but I would not have done it had I known what a low 'phthalein she had. Fortunately, it did no damage; I used small catheters. he had no blood-pressure symptoms, no urinary findings, nothing else in the world to indicate that she had an advanced nephritis except a low phenolsulphonephthalein.

Dr. James J. Ravenel, Charleston:

I am not qualified to discuss this except from the standpoint of the phenolsulphonephthalein. A patient who is constipated may, on the first functional test, give a very low reading. Disorder of the liver, any hepatic congestion, will for some unknown reason hold the 'phthalein, so that there will be a delayed excretion. The ideal way to run a phenolsulphonephthalein test is to run what is known as the fractional test: collect the first specimen in thirty minutes, then the succeeding specimens collect at twenty minute intervals until six specimens are collected in all. By this means we can determine whether or not the maximum excretion is early or late. If the peak is reached in the first or second specimen the kidneys are capable of concentrating early: if the peak is not reached until the fourth or fifth specimen the kidneys have lost the power of early concentration, therefore they show damage even though the sum total of dye excreted may be within normal limits. Early concentration means better renal function even though the total elimination is at the lower normal limit.

Dr. F. B. Johnson, Charleston:

I am glad that Dr. Bradley emphasized some of the simpler procedures that may be used in the diagnosis of this condition. There are many complicated procedures carried on, not so much for diagnosis but for information as to the extent of the disease and for prognosis.

We have come to lay great stress on one test, the urea-clearance test. While there are a great many cases of fairly advanced conditions which may show a normal urea, and in which the phenolphthalein test is of doubtful value, we have found that the urea-clearance test is of great help. It is not only of value in following up the prognosis, of the case—but is particularly of value in the early diagnosis. It has been shown by Van Slyke and others that the urea clearance test will show up loss of kidney function much earlier than any other test we have. This comparison of the figures on the blood and the urine urea has proven of much value. Of course, when we get the other, more advanced symptoms—high urea, etc.—it is hardly necessary to carry out this test, but in the earlier cases it is of much value.

One of the simpler tests that can be carried out by anyone is the specific gravity. The fixation of specific gravity gives information of great value—as also does the comparison of the day amount of urine to the night amount.

Dr. Bradley, closing the discussion:

I am very glad to have heard the various tests brought out and the correct interpretation mentioned. I purposely left them out because I know that a busy practitioner does not have time, frequently, in the average case to run the phenolsulphonephthalein and certainly not the blood-urea clearance or the blood-plasma proteins or the blood-creatinin-clearance test, which are somewhat complicated except for laboratory men. The Mosenthal test I think is a very good one. That is collecting the urine at various times of the day when you have the patient drink water at meals and no other time.

I was interested in the case Doctor Barron spoke about, in which he said there was no sign of nephritis at any time except the low phenolsulphonephthalein. Frequently we have a tendency to forget the patient's past history and what we can gain in the present condition by a knowledge of it. That applies in nephritis just as in anything else.

- ANDERSON, THE ELECTRIC CITY -

Airplane View of the City

Anderson needs no introduction to the Southeast. The name is synonymous with good roads, model schools, rich soil, record production, diversified crops, hydro-electric development and textile manufacturing.

Location and Population

Located in the famous Piedmont section or at the foothills of the Blue Ridge Mountains and bordering the Savannah River, Anderson County has long had the distinction of being not only one of the most progressive counties in South Carolina but the entire South. The County has a population of 80,949 according to the 1930 Federal Census, 72 per cent. of whom are white and 99 1-2 per cent. are American born. The City of Anderson is directly in the center of a great agricultural county with a radiating system of hard-surfaced roads equal to any in the country. The agricultural resources of Anderson County are supplemented by eighteen textile manufacturing plants, a large number of which are operated by hydro-electric power developed within the county.

Hydro-Electric Development and Public Utilities

More than 35 years ago Anderson was given the name of "The Electric City", due to the fact that she was the first town in the South to have an unlimited supply of Hydro-Electric power available for every purpose. It has been largely due to this cheap and reliable power that Anderson had developed into such a large industrial center.

The Anderson County Hospital

The Clinical Assembly is fortunate in having one of the outstanding hospitals of the State for its meetings. The new Nurses' Home has a large auditorium with modern facilities for teaching.

Hotel Facilities

Anderson has a number of good hotels but the John C. Calhoun Hotel will be Headquarters. The rates are reasonable and the service excellent.

Scene at the Country Club

Overlooking the Square

Anderson College

Anderson is the home of Anderson College, South Carolina's first fully organized Junior College, whose spirited parentage is traceable to one of the first institutions ever established for the higher education of women in the United States, the Johnson Female Seminary, opened in the village of Anderson in 1884.

A City of Homes

Anderson is a City of home owners and beautiful homes. A recent survey shows that approximately 82 per cent of the population of the City of Anderson live in their own homes. Anderson has two strong and active Building and Loan Associations which have been responsible in a measure for the large growth of the city and the large number of home owners.

Recreation Centers

The Electric City Country Club which is located one mile from the City limits of Anderson, has a splendid golf course, tennis courts, swimming pool and all facilities provided by any modern Country Club. Within a nice motoring distance from the City are located two beautiful lakes where one may enjoy swimming, dancing and picnics.

PROGRAM PIEDMONT POST GRADUATE CLINICAL ASSEMBLY, ANDERSON, S. C. SEPT. 3, 4, 5, 1935

Tuesday, September 3—3 to 6 P.M.

Preventive Pediatrics.
Dr. W. A. Mulherin
Professor of Pediatrics, Medical Department University of Georgia. Dean of the Southern Pediatric Seminar.

Infantile Paralysis,
Dr. R. M. Pollitzer, Greenville, S. C.,
Formerly Professor of Pediatrics, Medical College of the State of South Carolina. Member of Faculty, Southern Pediatric Seminar.

Everyday Pediatrics. Infant Feeding. Diarrheas,
Dr. D. L. Smith, Spartanburg, S. C. and Saluda, N. C.,
Registrar and Member of the Faculty Southern Pediatric Seminar

Wednesday, September 4—3 to 6 P.M.

Joint meeting with the South Carolina Division, Southeastern Surgical Congress.

Recent Progress in the Care of Hip Fractures,
Dr. J. Warren White, Greenville, S. C.,
Surgeon in Chief, Shriners' Hospital for Crippled Children.

Suppurative Pericarditis
Dr. George H. Bunch, Columbia, S. C.,

Cancer of the Colon,
Dr. A. Johnson Buist, Charleston, S. C.,
Professor of Gynecology and Abdominal Surgery Medical College of the State of South Carolina.

Thursday, September 5—3 to 6 P.M.

Practical Points in the Diagnosis and Treatment of Heart Disease,
Dr. J. H. Cannon, Charleston, S. C.,
Assistant Professor of Medicine, Medical College of the State of South Carolina.

The Pathology of Some of the More Common Cardiac Lesions Seen in General Practice,
Dr. Kenneth M. Lynch, Charleston, S. C.,
Professor of Pathology, Medical College of the State of South Carolina.

The Differential Diagnosis of Chronic Digestive Disorders,
Dr. A. I. Josey, Columbia, S. C.
Formerly Instructor in Medicine University of Rochester School of Medicine.

Wednesday Evening, September 4.

Joint Meeting of the Clinical Assembly with the Anderson County Medical Society.

Address:

The Medical College of the State of South Carolina, By Dr. Kenneth M. Lynch, Professor of Pathology, Charleston, S. C.

Information—

The Anderson County Hospital will be the center for the Clinical Sessions of the Assembly.

The John C. Calhoun Hotel will be Headquarters.

THE JOURNAL
OF THE
South Carolina Medical Association

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AUGUST, 1935

THE PIEDMONT POST GRADUATE CLINICAL ASSEMBLY

North Carolina was one of the first states to provide postgraduate instruction for the doctor in his home community. The first course in that state was given under the auspices of the State University cooperating with the medical profession. The first lecturers were professors from Boston and Chicago. These men were professors in two of the great medical schools of the country and pediatrics was the first branch of medicine to be taught. The success was so marked that since that time the idea has spread throughout the country until nearly all the branches of medicine are represented in the course of instruction taken to the doctor in the field. In our own state the Medical College of the State of South Carolina has been very sympathetic with every effort the State Medical Association has made along post graduate lines. A few years ago the College put on a most excellent post graduate course which for a time had a spectacular attendance. It has appeared, however, necessary to enlarge the old idea that the doctor must for brief periods visit the great medical centers in pursuit of graduate training. This, of course, is often necessary but only a few of the more fortunate members of the profession are able to avail themselves of it. Not until the entire profession has the advantage of some form of extension graduate instruction will the highest type of practitioner be possible. In view of this fact and as a result of the Obstetric Institutes now being conducted in this State by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia, in cooperation with the State Medical Association and the Children's Bureau of the United States, the Piedmont Post Graduate Clinical Assembly has come into being. The enthusiasm engendered at the first Obstetric Institute in Anderson, April 15 to 19, 1935, called for an immediate organization looking to providing instruction in other branches of medicine. A definite organization was launched with the following officers:

Dr. E. A. Hines, President, Seneca, S. C.
Dr. Jack Parker, Vice President, Greenville, S. C.
Dr. A. L. Smethers, Secretary-Treasurer, Anderson, S. C.

A steering committee was appointed and certain policies outlined. It was decided to hold the initial clinical assembly at Anderson, September 3, 4, 5, 1935. For the first assembly it was agreed to emphasize Pediatrics and Internal Medicine. The steering committee invited the South Carolina Division of the Southeastern Surgical Congress, Dr. J. R. Young of Anderson, Chairman, to participate jointly in the program.

The faculty has now been assembled representing some of the finest teachers of medicine and surgery in this country. It is desired and urged that every doctor in South Carolina who can possibly do so spend the three days in attendance upon this post graduate course. It is hoped that every officer of the State Medical Association, the members of the State Board of Health, the members of the State Board of Medical Examiners and the officers of constituent County and District Societies be present. This convergent movement of the medical profession toward Anderson with the first hand information sure to come of it should lead to a much greater trend in this State in the interest of graduate medical education. This is now a problem of organized medicine and not of the medical schools alone.

In this connection we wish to quote in full the leading editorial in the New England Journal of Medicine, Boston, Mass., August 15, 1935.

"CONTINUING MEDICAL EDUCATION"

Under this suggestive caption*, the Vice-President in Charge of University Relations, University of Michigan, describes Michigan's Postgraduate Program for keeping practitioners up to date in their knowledge of the science and of the art of medicine. The problem is stated in a quotation from Osler: "The family doctor, the essential factor in the battle, should be carefully nurtured by our schools and carefully guarded by the public." The responsibility of the public is generally lost sight of, but the participation of the schools has always been regarded as necessary. It is here that the teachers must chiefly be sought and found, but the form and degree of participation have varied in the numerous experiments made in many states. Osler was writing on the "Educational Value of Medical Societies," and it is to the state society that the general practitioner must look for the chief means for solution of the problem, with which he is by himself helpless to deal.

All of these experiments in "continuing medical education" are worthy of close scrutiny and study, for the physician should be a student all his life, but among the growing group the Michigan experiment especially deserves attention. The details need not be specified now: naturally they might be different in Michigan with a state university from what would be appropriate in Massachusetts.

The efforts of the Massachusetts Medical Society have met with encouraging response, but the opportunities have been merely touched. The hands of those responsible for the rather modest program should be upheld, and they should be encouraged by suggestion and helpful criticism.

The possible results of a wise program carried out over a period of years are very great. Already as Dr. Bruce says of Michigan: "There has been a decided improvement in the morale of the medical profession of the state and evidence of a helpful cooperative attitude of one physician to another stimulated by the class room contacts. In addition there has developed a teaching talent in many well-informed practitioners and specialists which hitherto has not had opportunity to express itself. But possibly more important than all, the standards of social responsibility of the profession have gone forward, as well as those of medical practice, with the evidence of a renewed confidence on the part of the people."

If these results may reasonably be expected, the movement deserves the support of every member of the medical profession and especially of every member of the state society.

*Continuing Medical Education: James D. Bruce, M.D. The American Scholar, Vol. 4. No. 2. Spring 1935.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

INSTRUCTION IN OBSTETRICAL NURSING

Twenty of the one hundred young women who took the examination in obstetrics-gynecology at the June examinations for registration of nurses in South Carolina made grades below sixty per cent. These twenty young nurses were graduates of training schools for nurses, operated in connection with hospitals in the state. The examination was not unduly difficult and was not unduly theoretical in its scope. The grading of the poorer papers was rather lenient and of the better papers rather strict, and yet there were many excellent grades made, and several were better than 95 per cent.

These facts demand thoughtful consideration on the part of those interested in nursing education, and bring up three questions.

Were these twenty girls sufficiently educationally prepared to undertake the course in nursing? They had certificates or diplomas indicating that they had completed two years or more of a high school course. However, there was very little indication of more than a most elementary sort of education in most of their papers. They could not spell even simple non-technical words, they knew nothing of sentence or of paragraph structure, and many of them showed an inability to understand even simple questions. There was nothing to indicate that these young women had been entitled to their certificates of education. There was every indication that they were too poorly prepared to acquire the technical knowledge upon which the practical work in nursing schools is based, and they should have been denied admission to training schools.

Why were these young women allowed to graduate from training school? They each had a diploma of graduation. The possession of this diploma certainly encouraged them in the belief and the hope that they could secure registration, and yet the outlook for many of them is absolutely hopeless unless they are gratuitously passed by the board. Would it not have been fairer, when it had been ascertained, as it must have been, long before graduation, that these girls, either because of inadequate education or lack of ability, were incapable of acquiring a nursing education, that they had been dropped from the school? Were they kept because their services were needed and could be secured at less cost than by employing graduates? If this is the case it is a defenseless exploitation of young women, and shows as well a disregard for the public good, for whether ever registered or not these girls will be *graduate* nurses and will be employed as such, even though they are denied remuneration equal to that of registered nurses.

Was the obstetrical training offered these girls adequate? This question applies to the larger number of the group only so far as it over-laps the two former questions discussed. They were not prepared to assimilate, regardless of how skillfully they were taught. But why were they allowed to pass their own school examination? There were others in the group under discussion, and still others whose grades were above sixty, but were low, who expressed ideas and opinions and advocated nursing practices, that were far from orthodox, and which would make them dangerous obstetrical nurses unless they were very closely supervised. It is hard to believe that either their didactic instruction, their text book study, or their hospital practice was adequate, fair to them, or safe for their prospective patients.

Training schools should not be operated solely for gain. They should select their pupils carefully, excluding those who show little or no promise of becoming successful nurses. They should recognize their obligation to those girls accepted and to the public which will look to them for nursing care. It seems that some South Carolina schools are violating these principles.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 289 (25009), APRIL 5, 1935

Service of Dr. Rhame

Student Finkelstein (presenting abstract):

White male carpenter, age 66 yrs., admitted Nov. 1, 1934, died Jan. 30, 1935.

History: Occasional dull pain in abdomen for past 3 yrs., gradually becoming more severe and frequent. Pain now dull and constant, generalized over abdomen, with occasional radiation to chest. Occasional swelling of abdomen, with nausea and vomiting twice. Some discomfort with fatty foods for 15 months, unable to eat such foods now due to distress. No jaundice, but considerable itching of skin noted. Stools pale and hard, shape flat. Rare constipation. Gradual increase of weakness, with loss of weight of 35 lbs. in 2 yrs.

Physical: A somewhat emaciated male, weak, but able to sit up. Temp. 98.6, pulse 60, resp. 20, B.P. 140-75. Slight jaundice of skin, with multiple sores due to scratching. Chest "funnel-shaped." Broncho-vesicular breathing in rt. apex. No abnormalities. Mediastinum normal. Heart not enlarged, tones of good quality. No murmurs or arrhythmias. Arteries slightly hardened. Abdomen: Marked tenderness, with rigidity, over R.U.Q. Mass in R.U.Q., apparently continuous with or part of liver, another mass "apparently in or part of cecum or ascending colon." Enlargement of right testicle, nature undetermined.

Lab: Urine (8 exams) normal for first few exams, post-op specs. showed hyaline, finely and coarsely granular casts but no albumin. Leukocytes 15-20 and RBC 6-10 on Jan. 4, other specimens relatively free. Blood Count (on admission): Hb. 60 per cent, W.B.C. 19,700, polys 70 per cent, achromia noted. Subsequent counts normal until 1-26; Hb. 74D, WBC 13,200, polys 75 per cent. Van den Bergh (11-5) direct 1 plus, delayed direct 2 plus, quantitative indirect 4.6 mgs.; icterus index 10.2. Blood Wass., negative. Gastric analysis (11-4) free HC1 0, 10, 44; chemical blood 2 plus, 4 plus, 2 plus. Feces clay-colored, hard, occult blood 4 plus; bile and urobilinogen neg. X-ray exams: Chest, Gastro-intestinal tract, Nasal sinuses—see chart.

Course: On 11-3, the mass described in rt. flank was thought to be just beneath the liver, smooth, about the size of a hen's egg, moving with, and apparently attached to, the liver. Mildly jaundiced. Exploratory laparotomy (Dr. Rhame) 11-20: "Large distended gall bladder with gangrenous area at fundus the size of a dime. Common duct distended, numerous fine adhesions about gallbladder. Liver probably a little smaller than usual. Chronic hepatitis. No nodules felt or masses seen. Pancreas hard and slightly nodular. Stomach, pylorus and other organs normal." Cholecystectomy and choledochotomy done. (Specimen lost) Wound continued to drain greenish serous fluid. Complained intermittently of headaches, pains in abdomen and in chest, but nothing could be found to explain these. On 1-25, patient fell back on bed, pulse slow and poor volume at this time. Nauseated. No precordial pain. B.P. 110-70. Considerable pain about umbilicus. Felt better, pulse improved after 3 hrs. Condition remained very poor, however, Vomited several times. Rales appeared in chest. Died. Temp. normal or below normal except for a slight post-op rise lasting days. Pulse 60-80 most of the time. Resp. unchanged.

Dr. Robert Wilson, Sr. (conducting): Mr. Bowden, will you start the discussion today?

Student Bowden: This patient evidently had some obstruction to the flow of bile, as evidenced by the clinically apparent jaundice, and the Van den Bergh tests. The direct positive Van den Bergh indicates obstruction to the passage of bile thru the biliary ducts, and the indirect test indicates some damage to the liver cells themselves. The finding of a distended gall bladder and common bile duct suggests that the obstruction is in the lower portion of the common duct. According to Courvoisier's law, impaction of a stone in the common duct usually gives a small

contracted gall-bladder, whereas obstruction of the gall-bladder from without, as from carcinoma of the head of the pancreas, usually gives a distended gall-bladder. If this law can be relied upon, we have here a case of compression of the common duct from without. Such an obstruction would most probably be a carcinoma of the head of the pancreas. It would doubtless be a primary tumor there. The testicular enlargement does not impress me as being a malignant neoplasm. The effect upon the liver is probably partly due to biliary obstruction and partly to metastases of the tumor there. A "latent" type of jaundice would hardly be what we usually expect with obstructive jaundice. I believe that there is also a chronic pancreatitis associated with the other conditions, doubtless due to pancreatic obstruction from the tumor in the head of that organ. The causes of death, to produce such a sudden termination, would probably have to be an embolus, but just what its location I would be unable to say.

Dr. Wilson: Mr. Stumbo, will you continue the discussion?

Student Stumbo: There is evidently some blockage of the common bile duct to give the jaundice, and more especially, the distention of the common duct noted at operation. Gall stones can be fairly well ruled out as they were searched for carefully at operation and none were found. The next commonest cause for obstruction of the common duct is carcinoma. This could be of the head of the pancreas, as the pancreas was thought to be nodular at operation, but I am more inclined to believe that it will be found at the ampulla of Vater, as there was considerable bleeding into the intestinal tract, as manifest by the occult blood in the stool. I believe that the condition of the liver is a chronic hepatitis as a result of the biliary obstruction. The termination was apparently by a sudden vascular collapse, and so I would expect embolism; this may be in the lung, altho there is nothing on the abstract to definitely confirm this. The usual termination in such cases is by a broncho-pneumonia, but this man's death was much too sudden for such a development.

Dr. Wilson: Let's get Mr. Kronrad to help us with this case.

Student Kronrad: We have a case of biliary obstruction without a history of colic to suggest gall stones, and without any stones having been found at operation. Such a condition of biliary obstruction is rather characteristic of carcinoma of the head of the pancreas. As to the cause of death, the sudden umbilical pain, slow pulse, and rapid fall in blood pressure strongly suggest a coronary occlusion, and the development of rales in the chest terminally strengthens such an assumption.

Dr. Wilson(demonstrating x-ray films and reading x-ray report): "Negative x-ray examination of the chest except for slight non-progressing dilatation of the aorta." The barium meal showed no gastric pathology. The examination of the colon by barium enema was reported as follows: "Persistent gross irregularity of ascending portion of colon, probably the result of a new growth." Would any one like to change their diagnosis after seeing the x-rays?

Student Lemkin: This irregularity seen in the ascending colon could well have been due to the presence of fecal masses. I would have liked to have had another enema at a later date before drawing any conclusions from the deformity noted. There are no symptoms of chronic intestinal obstruction as would be expected from such a growth, and the clinical findings being fairly definite in the other direction would make me hesitate to discard them on the basis of an x-ray film that is as subject to question as this one is.

Student Matthews: I do not believe that feces could give such a deformity, and I believe that we should rely more on the roentgenologist's opinion. He fluoroscoped the colon, and had much more to go on than we have here in a single film.

Student Bowden: The fecal material in the cecum and the ascending colon is liquid, and I do not believe that it could cause such a deformity.

Dr. Rhame: There was considerable difference of opinion among the members of the visiting staff as to the cause of this man's condition. I thought that I could feel his gall-bladder, and thought that such a finding indicated an exploratory laparotomy; the patient also requested it. From an x-ray standpoint, a positive diagnosis of carcinoma of the colon

seemed reasonable, but at operation the colon was found to be uninvolved. At operation I was very suspicious of the condition of the pancreas, and you see that I recorded on the operative report that the pancreas was hard and nodular. The common duct was about the size of your little finger, and for this reason, in association with a fairly evident chronic pancreatitis, a choledochotomy was done. A large drainage tube (about a 22 French T-tube) was inserted without difficulty and a large amount of bile drained outward. It seemed that he was improving until his sudden collapse, the cause of which could not be determined.

Dr. Prioleau: It has been suggested that the diagnosis of carcinoma of the ascending colon was untenable because there were no obstructive symptoms. This does not rule out a tumor in this location by any means, as we frequently see large tumors there without any obstructive symptoms. At operation a portion of the gall bladder wall was found to be gangrenous, and this early positive finding might detract somewhat from the value of the exploration; possibly a mass in the colon could have been overlooked. The common duct was well probed out indicating that there was no complete obstruction of its lumen. The condition of the pancreas as described at operation makes one very suspicious of the presence of a malignancy at this location, but in my experience the case of carcinoma of the head of the pancreas has been quite characteristic, with a much deeper jaundice than is recorded here, and with progressive deepening of this jaundice as the growth increased in size. The jaundice in this case seems to have been questionable, and the icterus index is certainly below that usually gotten in jaundice that is clinically evident. This atypicality of this patient's course makes a definite diagnosis almost impossible.

Dr. Wilson: I believe that the clinical picture is very strongly suggestive of carcinoma of the head of the pancreas, altho the jaundice is certainly not as conspicuous as that usually seen in such a case. But the nodular condition of the pancreas as found at operation can hardly be overlooked.

Dr. Lynch: This man had a carcinoma of the head of the pancreas, just where the pancreas is agglutinated to the descending portion of the duodenum. There is a small nodular infiltration at this point, while the rest of the pancreas appears normal. The growth had extended directly across to the walls of the duodenum, about the ampulla of Vater, as you can see here (demonstrating autopsy specimen). There is a large ulcerated and infiltrated area here about the ampulla, and its margins are somewhat fungoid. The bile ducts, both within and without the liver, are markedly dilated, and their linings are stained green with bile. Of course the bile was draining to the exterior as a result of the choledochotomy, and this free drainage of the bile prevented the development of the classical late-stage picture of carcinoma of the head of the pancreas, with its extreme jaundice. No jaundice could be noted at autopsy. Altho there was a marked dilatation of the common duct, its lumen could still be probed, possibly as a result of the mucosal ulceration about its mouth. The condition of the liver is that of a fairly long-continued infective cholangitis, and an early stage of obstructive biliary cirrhosis.

Whether this tumor began in the pancreas and went to the duodenum or began in the duodenum and extended to the pancreas was the question that was difficult to determine. Grossly, the ulceration about the ampulla was very suggestive of a primary tumor there, but the microscopic appearance, with rather well developed new-formed tubules, closely resembling pancreatic acini, pointed more towards the pancreas as the tissue of origin.

Little else was found at autopsy. There was no evidence of embolism, altho the brain was not examined. There was no evidence of a pulmonary infection. The infective condition of the liver was fairly well drained by operation. And so the immediate cause of death was not accurately determined.

The deformity of the colon as demonstrated by the x-ray must have been due to adhesions. These were noted at operation and were very numerous, especially about the hepatic flexure, at autopsy. There was no intrinsic lesion of the bowel.

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

PURPURA HEMORRHAGICA IN PREGNANCY—H. W. deSaussure and E. W. Townsend, Charleston. Am. J. Obs. & Gyn. 29 April 1935—597.

Report of a case in which bleeding into the urinary tract was a prominent feature. There was marked reduction of renal function.

THE SIGNIFICANCE OF LABORATORY FINDINGS IN DIABETES—F. B. Johnson, Charleston. Sou. M. & S. 97 May 1935—257.

Review of the value of the laboratory in Diabetes with an illustrative case report.

DIABETES FROM THE STANDPOINT OF THE INTERNIST—G. R. Wilkinson, Greenville. Sou. M. & S. 97 May 1935—243.

An outline of the management of the diabetic patient in the office.

SUPPURATIVE PERICARDITIS—G. H. Bunch, Columbia. Am. J. of Surg. 28 June 1935—613.

The author finds that this condition is not rare in children and young adults, and that it is frequently not diagnosed. The only treatment is surgical. Illustrative case reports are given. The article is well illustrated.

PROSTATIC RESECTION—T. M. Davis, Greenville. Urol. & Cut. Rev. 39 June 1935—372.

A comprehensive discussion of the author's methods and experiences with prostatic resection with the aid of the cystoscope.

TRANSURETHRAL REMOVAL OF URINARY CALCULI—L. P. Thackston, Orangeburg. Urol. & Cut. Rev. 39 June 1935—423.

A sketch of the history of removal of calculi and discussion of the feasibility of the transurethral operation. The author finds the mortality low when the operator possesses the necessary skill.

SUTURE OF STAB WOUND OF THE HEART—G. Benet and C. G. Spivey, Columbia. J. A. M. A. 104 June 1, 1935—1979.

Case report of successful operation upon the heart, with discussion of the technique of operation.

APLASTIC ANEMIA FOLLOWING STOVARSOL (ACETARSONE) THERAPY—D. L. Smith, Jr. and R. A. Lyon, Spartanburg. J. of Ped. 6 May 1935—624.

Case report with details of treatment. This appears to be the first report of this kind, tho other medication than Stovarsol was used in this instance. The child recovered.

PULMONARY ASBESTOSIS III—CARCINOMA OF LUNG IN ASBESTO-SILICOSIS—K. M. Lynch and W. A. Smith, Charleston. Am. J. of Cancer 24 May 1935—56.

Report of a case in a man who worked many years in cotton mills and an asbestos factory, and had the characteristic fibrosis of silicosis, with carcinoma arising from the metaplastic epithelium of one of the smaller bronchi.

BOOK REVIEWS

MANUAL OF CLINICAL LABORATORY METHODS, by Pauline S. Dimmitt, Ph.G., Medical Technologist for the Stout Clinic, Sherman, Texas. Former Instructor in Biological Chemistry, University of Texas School of Medicine; and Medical Technologist in the Pathological Laboratory, John Sealy Hospital, Galveston, Texas.

Illustrated with 36 engravings, including 7 full page colored plates, Philadelphia, F. A. Davis Company, Publishers, 1935.

This book was first published in November 1934 and reprinted in July 1935. One is impressed immediately with the simplicity of the plan. There are eighteen chapters as follows:

Chapter I. Examination of Urine.
Chapter II. Examination of the Blood.
Chapter III. Examination of Sputum.
Chapter IV. Examination of Gastric and Duodenal Contents.
Chapter V. Liver Function Test.
Chapter VI. Examination of Feces.
Chapter VII. Examination of Transudates and Exudates.
Chapter VIII. Examination of Cerebrospinal Fluid.
Chapter IX. General Bacteriological Methods.
Chapter X. Preparation of Autogenous Vaccines.
Chapter XI. Examination of Milk.
Chapter XII. Agglutination Tests for Bacteria.
Chapter XIII. Blood Transfusion Tests.
Chapter XIV. Complement Fixation Tests for Syphilis.
Chapter XV. Eagle Flocculation Test for Syphilis.
Chapter XVI. Blood Chemistry.
Chapter XVII. The Hormone Test for Pregnancy.
Chapter XVIII. Volumetric or Standard Solutions.

It is important that every practitioner be familiar with the routine laboratory methods in modern practice and if he can carry out personally these tests so much the better. At any rate he should be familiar with the progress being made in this branch of medicine and this book will serve that purpose admirably. There are only one hundred and fifty six pages, therefore, it can be read from cover to cover almost at a sitting. The illustrations are very good indeed.

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COLUMBIA MEDICAL SOCIETY

The Columbia Medical Society met, Monday, June 10, 1935, in the Crystal Room of the Columbia Hotel at 8:30 P. M.

The following program was carried out:

1. Methods Employed in the Diagnosis of Ano-Rectal Diseases—Dr. Benj. Rubinowitz.
2. The Hard of Hearing and the Otologist—Dr. W. J. Bristow.

O. B. Mayer, M.D., President.

Benj. Rubinowitz, M.D., Secretary.

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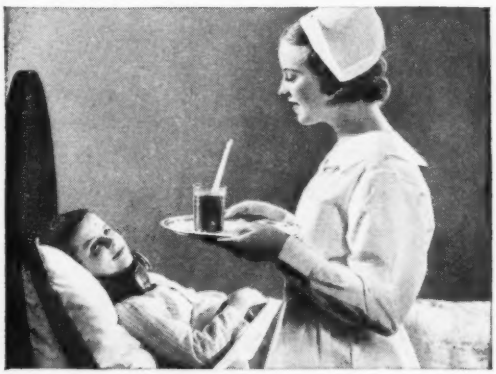

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ISCHIO-RECTAL ABSCESS AND RECTAL FISTULA

By
WILLIAM H. PRIOLEAU, M.D., F.A.C,S.
Charleston, S. C.

Due to trauma from the passage of constipated stools, frequently containing abrasive material, and the constant presence of pathogenic micro-organisms, the rectum is often the site of abscess formation. Some involve only the skin or mucous membrane, while others the crypts and deeper tissues.

The subcutaneous space at either side of the rectum is designated as the ischio-rectal fossa. Its limitations are the rectum and levator ani muscle medially and above, the tuberosity of the ischium laterally, and the skin below. It contains fatty tissue and the pudendal vessels.

This space is frequently infected as the result of organisms entering the rectal wall through tears in the mucosa and infected crypts, and passing through it to the fatty tissues on the outside. It may be infected also from abscesses of peri-anal hair follicles, and in the male from posterior urethritis. The infecting organism is generally B. coli. Formally it was considered that these infections were tuberculous, but recent work has proven that only a small percentage are of this nature. No doubt this idea gained credence due to their chronicity and their occurrence more frequently in run down individuals. Even in the tuberculous ones the colon bacillus is a constant secondary invader.

Ischio-rectal abscesses occur in both sexes and at all ages. They are found more commonly in men. The fatty tissue becomes indurated. As the space is more or less limited by fascial planes, increased tension soon develops. Suppuration occurs late. The abscess may extend around the posterior of the rectum and involve the corresponding region on the other side. Occasionally it passes through the levator ani to form a pelvi-rectal abscess. The tendency is for it to rupture through the skin of the buttock or into the anal canal. With the establishment of drainage in this manner the inflammatory process subsides, but due to its inadequacy a fistulous tract remains. This is reinfected through a small but persistent opening into the anal canal, generally in the bottom of a crypt, resulting in intermittent swelling followed by discharge through the skin opening which affords temporary relief. With the passage of time there is a tendency for subcutaneous burrowings with the development of other skin openings.

The clinical picture is that of constant pain and extreme tenderness on one side of the anal orifice. There is some systemic reaction to the infection. Upon examination there is found general swelling and induration to one side of the anus. This is particularly noticed by palpating with the index finger in the rectum and the thumb on the outside. The overlying skin is generally of normal color, as the skin itself is involved only late. The inguinal glands may be enlarged and tender.

The treatment consists in early and adequate drainage by incision through the skin of the buttock. This should be done as soon as induration is detected. Poulticing only gives time for the process to spread. A regional or general anesthesia is preferable so as to permit thorough exploration. In an early case local skin infiltration with novocain is satisfactory. The incision should be of a type that will remain open. A-T-form is satisfactory—or a piece of

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skin may be excised. Exploration should be made to detect pockets and give them drainage. The walls of the cavity should be held apart by vaseline gauze or rubber tissue until the acuteness of the process has subsided. This should be changed daily, and a hot sitz bath given. If the drainage has been timely and adequate, the abscess heals without leaving sequellae.

A fistula is generally the result of an extension from an infected crypt or of an abscess which has been inadequately drained—it is a tract between the anal canal and the skin. As with the abscesses they are mostly of a pyogenic nature, only a small percentage being tuberculous. As a rule there is only one opening in the rectum while not uncommonly there are a number of openings on the skin. The discharge is purulent, and practically never contains fecal matter. Where the skin openings are around the posterior half of the anus, the internal opening is invariably posterior. In the anterior half the internal and external openings are generally opposite each other. The fistulous tract commonly runs between the internal and external sphincters, but at times between the fibers of the external sphincter or subcutaneously. Thus the internal opening is only rarely above the internal sphincter. This is an important point in the treatment.

The course is one of chronicity. Swelling is followed by pain. Discharge through the skin opening gives temporary relief. There is a tendency for the infection to burrow posterior to the rectum, laterally to the ischial tuberosity, and even above the levator ani.

In order to effect a cure, it is necessary to give complete drainage to the fistulous tract and all of its pockets and ramifications. It is well to locate the internal opening at the start. This is generally found posteriorly at the bottom of a crypt. A grooved director may be inserted, and either at first or later this portion of the tract may be opened by incising the tissues external to it, including the fibers of the external sphincter. The subcutaneous portions of the tract should be laid open, taking care to overlook no pocket. In this region the inflamed tissue may be excised, though it is not necessary to do so.

It is essential that overhanging skin and mucosa edges be excised so that healing will take place from the bottom upwards. The portion of tract in the region of the sphincter should not be excised, as this anchors the ends of the muscle and prevents gaping with insecure healing and fissure formation. A small wick of vaseline gauze is placed along the tract into the anal canal. A firm dry dressing is applied. After the first three days the gauze is changed daily until healing has occurred. The anus is cleansed with cotton and water after each bowel movement and kept dry with a firm dressing of gauze pressed against it. Before the first bowel movement a few ounces of mineral or olive oil are instilled into the rectum through a small catheter. Mineral oil is given by mouth. The patient leaves the hospital after the third day and may resume work. The wound heals in the course of two or three weeks in the average case.

The operation is most easily performed with the patient lying on the abdomen with pillows under the hips. Regional or general anesthesia is preferable; however, local may be used in simple cases.

Great care should be taken to locate the internal opening and not to make a false one. Sufficient skin external to the anal canal should be excised so as to provide adequate drainage. The tract in the region of the sphincter should be held apart with a thin strip of gauze and not firmly packed, as this will separate the ends of the muscle. Should the involvment around the sphincter be extensive, it is well to defer excising the inner portion of the tract until a later time so as to avoid an unsatisfactory healing of the sphincter due to its ends retracting.

No incontinence results from dividing the sphincter, provided it is cut straight across and the wound kept clean so as to prevent sloughing. The anal canal heals smoothly without fissure formation and it functions perfectly.

SUMMARY

1. Rectal infections are generally of pyogenic nature and result from the trauma caused by the passage of constipated stools and the constant presence of pathogenic micro-organisms.

2. Ischio-Rectal abscesses should be drained early and thoroughly by incision.

3. Rectal fistula generally is the result of an

infected crypt or an inadequately drained ischio-rectal abscess.

4. Rectal fistula is treated by incisioned drainage of the whole tract, with division of the overlying fibers of the external sphincter muscle.

DISCUSSION

Dr. Thomas Brockman, Greenville:

Congratulations to Dr. Prioleau for giving us this good paper. He is one of this Society's best contributors to medical literature. I am glad he selected Rectal Abscess and Rectal Fistula for two main reasons:

First: Rectal abscess is often a very serious affair when occurring in patients above sixty years of age, or even in younger individuals if allowed to ripen and penetrate the deeper structures. The elderly patient rapidly goes into a delirium or coma, often simulating prostatic obstruction with all of the toxic manifestations seen in this type of patient. Sometimes the abscess area is not recognized in this type until rupture occurs.

Second: Because I am sure there are too many good doctors who believe the abscess should ripen before being incised, which is a serious mistake. Early drainage by incision and scalping of the area under general anaesthesia is the ideal or modern treatment for rectal abscess. I say general anaesthesia because local or regional anaesthesia does not in my hands furnish a relaxed patient. Complete relaxation is essential to do a thorough drainage operation breaking down the fibrous bands, exploring the various pockets encountered with glove finger and of thoroughly establishing drainage. By doing a good job of operating a rectal abscess we nearly always prevent the formation of rectal fistulae, which is, as you all know, the natural sequelae as Dr. Prioleau has told us.

There is a strong tendency amongst medical men to lance the abscess and relieve the patient of the constant pain, but I would like to urge that this condition be treated as an emergency operative procedure and carried to the hospital where it can be done properly and after care given.

Suppose we do our duty when the patient is first seen and prevent a second operation for a complicated fistula, often times several years after the original abscess. When these patients are once relieved of the pain from abscess by incising the area, we have all seen this same patient carry a chronic draining rectal fistula for years before submitting to surgery.

Just a word on prevention of rectal abscess. The infection nearly always enters through one of the anal crypts, generally the post anal crypts. The internal opening of a rectal fistula is nearly always found in an anal crypt. Let's learn to recognize infection of anal crypts and operate these patients before abscess formation, always the first stage of fistula.

I again want to thank Dr. Prioleau for his splendid paper.

Dr. L. H. McCalla, Greenville:

I think there are very few pathological processes involving the lower colon and the anal canal that give us more concern than sometimes this condition of ischio-rectal abscess and fistula. As the Doctor brought out, I feel that the pathological process begins in an infected anal crypt, burrowing through to the deep peri-anal tissue, with abscess formation. Unfortunately, these patients as a rule seek medical relief late, after a well established abscess is formed. Even then, with insufficient drainage, as the Doctor brought out, anal fistula is usually the final result.

There is one thing he mentioned—locating the internal opening in preparing for this operation is a very important thing. It obviates quite a great deal of embarrassment to locate the opening and follow it through from that end. Invariably, or I might say in ninety per cent of the cases, the opening is found in the midline of the rectum.

As to anaesthesia, in operating only for fistula I like sacral anaesthesia as well as any, although in the difficult cases of abscess formation and induration we have to give a general anaesthetic. In the postoperative care I think it is very important after after each bowel movement to give a hot-water irrigation; then by daily supervision of the wound, applying mild antiseptics and by taking a cotton swab and passing it through the depths of the wound you can prevent the skin from adhering or bridging over. I think the postoperative care in these cases is very important.

Dr. S. E. Harmon, Columbia:

Just one suggestion. If those of you who do rectal work have never tried caudal anaesthesia, just try it. I think it is free from danger, and it works very nicely.

Dr. Prioleau, Closing the Discussion:

I just want to thank the gentlemen for the discussion.

The term "regional anaesthesia" is used to include, of course, the sacral and the spinal anaesthesia.

THE CLINICAL ASPECTS OF PRIMARY PULMONARY CARCINOMA

By

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There has been a striking increase in the incidence of carcinoma of the lung, or more correctly carcinoma of the bronchus, in the past two decades. This increase has been ascribed

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to several factors. One of these is longevity. More people are reaching the "cancer" age than ever before. Life expectancy has increased to 58 years. Fewer people are dying of typhoid fever, diphtheria, and tuberculosis; hence, according to Wells, "A high cancer death rate is evidence of a good state of public health."

Recent statistical studies reveal that the increase of pulmonary neoplastic disease is far in excess of the increased occurrence of general cancer. Another factor, then, must be better recognition. Improved facilities of study have tended to greater diagnostic accuracy. Many cases which have been classed otherwise have been brought to light. It has been pointed out that with the use of the equipment now at hand, viz., the X-Rays, the bronchoscope, pneumothorax, the thoroscope, opaque substances, etc., the diagnosis of cancer of the lung should be correct in 75 per cent of cases.

The increase in this disease has been attributed also, as in cancer in other locations, to some form of irritation. Automobile gas, smoke, tar dust from the roads, etc., have been incriminated as well as influenza because of the peculiar epithelial regeneration which occurs in healing. It has been shown that workers in the mines of the Erz Mountains have a high incidence of cancer of the lung, and this has been ascribed to the arsenic content of the mine dust. Radioactive substances in the dust have been thought to be a factor also. Speculation as to the possible relationship of dust hazard occupations has arisen, but up to the present time this has not been established. However, we have encountered two cases of primary carcinoma associated with asbestos fibrosis (asbestosis).

Whatever the etiological factors concerned, the fact remains that carcinoma of the lung is more and more frequently presenting itself for diagnosis. Clinicians should be mindful of its possible presence, and attempts should be made to discover it in its early stage, for then and only then is there a possibility of its cure.

The bronchoscopist and the surgeon have already successfully treated a number of these cases. The diagnosis in the advanced stage, too, is of more than academic interest because of its economic potentialities to the patient.

The neoplasm develops most frequently after 40, the average age being 49. It is more common in men than in women. It has no predilection for race. In the early stages a cough which does not respond to rest, and associated with bloody sputum, negative for tubercle bacilli, and showing little or no evidence of lung pathology, either by physical examination or by X-Rays, constitute the most dependable group of symptoms for which bronchoscopy is indicated, and a small bronchial growth may be revealed. There is little loss of weight, anaemia or loss of strength at this time. It is here that surgical, roentgen and radium treatment achieve some success. Beyond this stage the clinical picture becomes more complicated. This is readily understood when we consider the mode of origin and the methods by which the disease progresses. There are three main sources of origin: (1) from the mucous membranes of the bronchus, (2) from the cells lining the mucous glands, and (3) from the pulmonary alveoli themselves. (This last has not been proven, but is accepted by some pathologists.) The neoplasm may simply infiltrate the lung—the so-called "infiltrative type"—causing a massive consolidation restricted for a time at least to one lobe, and simulating lobar pneumonia. The chief symptoms here are dyspnoea and loss of weight and strength; there is little or no cough and practically no fever. The roentgen picture suggests pneumonia also.

When, however, partial or complete bronchial occlusion occurs, there are numerous pathological changes which develop: atelectasis, bronchiectasis, necrosis, pleural effusion and thickening, secondary infection. A multiplicity of symptoms and physical signs will result. Pain in the chest, dyspnoea, cough, sputum of varying characteristics—often bloody, sometimes foul, chills, fever, sweats, loss of weight and strength, are all common, occurring in varying combinations. To cloud the issue still further, metastatic involvements often develop, and in some cases "steal the picture." The roentgenogram in these conditions is equivocal, but always of diagnostic importance. The laboratory is rarely helpful.

Few of these advanced cancers are benefitted by therapy, though occasional favorable results

from roentgen treatment are reported, but the solution of the complicated clinical mystery is satisfying to the physician and of real importance to the patient and his family, as it removes the "stigma" of tuberculosis, and at the same time possibly conserves their financial resources.

I would like to present a few cases which illustrate pretty well the more common clinical aspect of the disease.

CASE I

A. B. A colored female, who gave her age as 40, but was probably older, was admitted to the Roper Hospital in May, 1926, with a diagnosis of pulmonary tuberculosis. She gave a history of having had cough, hoarseness, heavy feeling in her chest, and night sweats for a year. She remained under observation at the hospital for three weeks; the physical findings showed dullness over base of right lung, with diminished breath sounds. Aspiration was attempted, but no fluid obtained. She had some of the stigmata of syphilis; corneal ulcer; moderate general glandular enlargement; numerous pigmented scars, and a positive blood test.

She remained in the hospital three weeks, during which time she had a slight daily elevation of temperature to 99 to 100, on two occasions going as high as 102.

The report of the roentgenologist was as follows: X-Ray of the chest with the fluoroscope and film shows right chest half full of encapsulated fluid. (Case 3, page A.)

In September she came to the Chest Clinic in the out-patient department; examination at this time showed dullness and absence of breath sounds over the entire right lung, and dullness, coarse rales, modified breathing on the left. The patient was very much emaciated. It was believed that she had extensive pulmonary tuberculosis with a pleural effusion on the right, and a caseo-pneumonic process on the left. She entered the hospital on October 5th. Numerous sputum examinations failed to show tubercle bacilli. Vigorous anti-syphilitic treatment did not improve her condition; cough, dyspnoea, and pain in her chest grew progressively worse. The second X-Ray film, taken four months after the first, showed marked density throughout the right lung and two-thirds of the left.

Autopsy revealed primary carcinoma of right lung with metastasis throughout left.

CASE II

A white man of 50 years, clerk in a Government office, found in the middle of June, 1932, that he was growing extremely weak, and slight effort produced great fatigue. Soon he noticed that he was having tarry stools. He had noticed during the preceding month that his abdomen was growing much larger. He thought he was getting fat. He also had had some gastric pains after eating during this time. In July he coughed up blood streaked sputum.

Physical examination revealed dullness and diminished breath sounds over right base, a few rales in second interspace. Tubercle bacilli were found in his sputum. A large amount of fluid was obtained on tapping his abdomen. This had the characteristic of transudate.

On removal of fluid palpation revealed liver enlarged and nodular.

During course of illness he had a septic temperature, sweats, cough, and pain in right side of chest. He lost ground rapidly, growing thinner and weaker daily. He had to be tapped frequently to give relief. He died in October 1932.

The final diagnoses were: Gastric ulcer; pulmonary tuberculosis; carcinoma of liver, metastatic from an unknown primary source.

The pathological diagnosis was: bronchogenic carcinoma with metastasis to liver; gastric ulcer; pulmonary tuberculosis.

CASE III

W. S. White policeman, aged 40. In October, 1931, had a chill followed by fever which lasted a few days, and cough. Cough persisted. Not productive at first, but later had purulent sputum, which was bloody for a time. Had recurrent attacks of chill and fever. In February, 1931, had an X-Ray made, and it was thought he had a "peculiar" type of pneumonia. Was under continuous observation until July 8, 1933, when death occurred. During this time he suffered a great deal of pain in the left chest, cough, dyspnoea, loss of weight and strength, and toward the end by septic symptoms.

The physical signs varied considerably

throughout the disease, but at first consisted simply of a few scattered rales over the right base. As the disease progressed, dullness, diminished breath sounds, and displaced apex impulse to left.

Except for a positive Kahn the laboratory examinations were not significant.

The diagnosis of this case could have been made by bronchoscopic examination as early as October, 1931, but it was not until several months after onset, and then by process of elimination.

The serial roentgenograms trace the progress of the disease and the effects of the obstruction on the surrounding lung structures.

The pathological examination showed a hard, large growth just below the bifurcation of the bronchus on the right, with atelectasis of the lower lobe and bronchiectasis of the upper. The lung substances also showed some extension along the lymph channels. There was no obvious metastasis. His cranium was not opened, but his symptoms prior to death suggested the possibility of metastasis of the brain. This is not an unusual occurrence.

CASE IV

The subject was a white man, 57 years of age at the time of death. He first came under observation at the Shirras Dispensary of the Roper Hospital January 10, 1934, at which time he appeared very old, weak and emaciated.

His chief complaints were pains in the right side of "stomach", right side of back and shoulder, and shortness of breath.

History of present illness: Prior to 1931 his health was good and practically no time was lost from work as a result of illness, although for the previous five years he had noticed some shortness of breath. In 1931 he lost three days from work on account of sharp pains in his back extending down over the three lower ribs. Nine months later intermittent sharp shooting pains recurred, involving his right shoulder. This lasted about ten days. Except for the shortness of breath noted it was not until November 7, 1933, that the pains again occurred, involving the right shoulder, axilla, and the three lower ribs on the same side. The pain occurred about every hour and lasted about thirty minutes. It seemed to be more severe during the night. In addition to the pain he became quite weak and seemed to lose weight. He was now compelled to quit work and seek medical aid. During November and December, under medical care, he grew weaker, lost more weight, his dyspnoea became more aggravated, and a cough, productive of wiry, white mucoid sputum, developed. On January 8, during a spell of coughing, he expectorated a mouthful of fresh blood mixed with mucoid material.

Occupational history: He was a weaver in a cotton mill for 22 years and a weaver in an asbestos factory for 21 years.

Course: Throughout his stay in the hospital the patient continued to complain of persistent pain along the right costal border and right side of abdomen, the cough, accompanied by expectoration of a large quantity of mucopurulent sputum, continued and became more aggravated. There was anorexia and progressive loss of weight and strength. For the first three weeks after admission there was an irregular afternoon elevation of temperature. In the latter weeks of the illness fever of remittent type was constantly present (99 degrees-101 degrees) rising on the day of death to 104 degrees. The pulse rate ranged between 90 and 100. The respiratory rate was constantly above normal, and on the slightest exertion there was dyspnoea.

Chest: The bony thorax was of the emphysematous type. Expansion was equal but poor. Dullness was present over the bases of both lungs, being more marked on right. The upper levels were resonant. Breath sounds were suppressed over the right base. Rales of all varieties were present in the lower posterior and axillary aspect of the chest, though less numerous over the right base than the left. They were increased by cough. There were numerous coarse dry "squeaking" sounds over the upper lobes as well.

X-Ray examination of chest, (by Dr. Hillyer Rudisill): "First examination, Jan. 12, 1934. There is a generalized fibrosis throughout both lungs, particularly in the bases. There is generalized increased density in the right base, probably caused by pleural thickening. In addition I believe there are bronchiectatic areas through the lower halves of both lungs.

"Impression: Pulmonary fibrosis, pleural

thickening (particularly right base), and bronchiectasis—probably the results of inhalation of some irritant material."

Laboratory examinations: Tuberculin test, Mantoux, negative. Wassermann negative. Sputum—no tubercle baccilli on numerous examinations. Asbestosis bodies present in unconcentrated viscid tough muco-pus. Fungi negative.

The final diagnosis was asbestosis and chronic indurative pneumonia.

PATHOLOGICAL RECORD

Autopsy (B.G.) No. 20514-34-58, March 17, 1934.

Summary of pathological diagnosis: Fibrosis of Lungs; Pulmonary Asbestosis; Epidermoid Carcinoma of Right Lung; Bronchiectasis; Bronchitis, Purulent; Pleurisy, Acute; Myocarditis, Chronic.

DISCUSSION

Dr. E. W. Carpenter, Greenville:

This condition has been thought to be rare, but it is perhaps not so rare. If recognized in its early stages, perhaps a great deal can be done. Dr. Smith did not say anything about it, but perhaps an early lobectomy could be done, or, if wise, a pulmonectomy, or perhaps taking out the whole lung on that side.

There is a thing that might help you in your diagnosis that the doctor did not mention. Opaque substances in the lungs help you to find the lesion, if the obstruction is located there. You can visualize the bronchial tree with greater clarity if you use opaque substances. The technic is not so easy as it sounds. You can do that previous to a bronchoscopy and then take a section through the bronchoscope.

Dr. E. C. Hood, Florence:

I certainly have nothing to add to the paper; I think Dr. Smith covered the subject beautifully. I feel very much as Dr. Smith has said, and Dr. Carpenter has added in his discussion, that this is something well worth while and something that we should be thinking about. This is one of the things which confronts every day those of us who are dealing with lungs. So I want to say again, I enjoyed Dr. Smith's paper.

Dr. T. R. Littlejohn, Sumter:

I should like to ask Dr. Smith a question. In the second case that he reported I believe he said they found tubercle bacilli in the sputum; but on the autopsy reports he did not say whether the man had tuberculosis, too. This man had primary carcinoma of the lung. I should like to ask these gentlemen what has been their experiences in these chronic pulmonary conditions, especially tuberculosis, with the positive Wassermann. In most of the cases that I see of chronic pulmonary conditions they have positive Wassermann reactions. I do not believe that the majority of these cases have syphilis; as syphilis of the lungs is a very rare condition.

Dr. Smith, Closing the Discussion:

There are a good many more things I might have said, but having the thought of these fifteen minutes hanging over me all the time kept me pressed.

In regard to Dr. Littlejohn's question, I do not think I made that so clear. In that second case the man had pulmonary tuberculosis clinically and pathologically. He had three diseases, and I do not blame myself or others for not making a diagnosis. He had gastric ulcer, pulmonary tuberculosis , and had primary carcinoma of the lung with metastatic carcinoma in the liver and other parts of the body. With regard to Dr. Littlejohn's other question, I think the positive Wassermann reaction is usually indicative of syphilis. We very frequently find those two chronic diseases associated in the same person, pulmonary tuberculosis and syphilis. This combination presents a therapeutic problem about which there is no agreement. I think where the two diseases are equally evident, we had better treat them both vigorously. If the tuberculosis dominates the picture, and the syphilis appears to be quiescent, I believe in treating the tuberculosis with vigor and the syphilis more or less with contempt.

THE MANAGEMENT OF THERAPEUTIC MALARIA FOR SYPHILITIC MENINGO-ENCEPHALITIS (GENERAL PARESIS)

By

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In presenting this paper an effort will be made to give you as briefly as possible what are the most important things to keep in mind when managing a case of therapeutic malaria.

1. Methods of Inoculation.

At the South Carolina State Hospital we use two methods of inoculation. (1) By the mosquito that has been infected with malaria, (2) by citrated blood taken from an active case of malaria. We have used emulsion of sporozoites taken from the mosquito's stomach for

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inducing malaria, this being given subcutaneously. This method has been discontinued on account of the danger of mixed infection and the prolonged incubation period. I do not believe that it makes any difference as to the method of inoculation so long as the patient gets the malaria and a pure strain. Malaria can be obtained from the South Carolina State Hospital. If you have a patient that you wish to have inoculated with malaria and will write to us stating whether the individual is colored or white, we can send you the blood by mail and you may inoculate the patient; or if you prefer, you can send the patient to the hospital and we will be glad to inoculate for you. I would request that anyone sending a patient to the hospital for an inoculation would please write ahead of time, because malaria is not always available, and it may save you some trouble by making an appointment; and when the patient arrives, there will be no delay in inoculating him and returning him home. I have not observed any anaphylactic reaction following the inoculation of patients in the hospital. There is a possibility of this occurring, and one should always be on the lookout for such complications.

2. Inoculation Period.

Before the patient develops the malaria, it is not necessary that he be in a hospital; however, he should be kept at home where he can be closely watched by competent individuals. The malaria usually develops in seven to thirty days, depending upon the type of inoculation. The mosquito inoculation is much slower than the tertian. We use two types of malaria—tertian for white people and quartan for the negro race. It is extremely difficult to get a take in the colored race, and in trying out the different types of malaria we have found that quartan will give about 95 per cent positive takes in the colored race. The benign tertian is the ideal type of malaria to use, because it is easy to control and does not wear down the patient's resistance so rapidly.

3. Number of Paroxysms Necessary.

This is a question which we cannot answer definitely. We believe that less than eight paroxysms will not do any good and that the average case should run from twelve to fourteen if the individual's condition is such as to permit it. We have had some cases which were allowed to have as many as twenty paroxysms. We do not consider patients as having had a paroxysm unless there are chills with fever not less than 102. Temperature below this is not considered sufficient.

4. When to Terminate Malaria on Account of Complications.

No two individuals are going to react the same; therefore, no definite rule can be formulated. There are certain conditions which if watched closely will give you a general idea of the individual's resistance and indicate when he has reached the danger period which shows that it is no longer safe to allow the malaria to continue. Before an inoculation it is necessary to make a thorough physical examination of the individual and record on the chart the following: weight, age, height, blood pressure, total leucocytic count, total erythrocytic count, differential count, hemoglobin, blood urea, creatinin, blood sugar, and urinalysis. These having been recorded, it is then easy to note the variations. Anemia sometimes develops early and progresses rather rapidly. This is very easily detected by the color of the patient's mucous membranes. The laboratory work will give you an accurate check as to the degree of anemia. Sometimes the hemoglobin falls rapidly; and when it reaches forty per cent or the red blood cells decrease to two and a half million, you are within the danger zone and it is not wise to continue the malaria. The blood pressure should be carefully watched; and if there is a constantly falling systolic pressure with a rising diastolic, it is a warning that you must pay close attention to the heart action. As long as the blood pressure remains fairly well stationary, or not over a drop of 20 to 30 points, the patient is fairly safe. There usually is a tachycardia accompanying a constant falling blood pressure; and if this condition persists between paroxysms when the temperature is practically normal, it is not wise to continue the malaria. Sometimes convulsions and paralysis develop during the course of the malaria, and this calls for an immediate termination. A rapidly developing coma calls for drastic measures to stop the malaria, as this may indicate that the capillaries of the meninges of the brain are beginning to become clogged with parasites. Delirium and mental excitement will

sometimes come on very suddenly during the treatment, and it is for this reason that it is always preferable to have the patient in a hospital, or if in the home to have a nurse constantly at hand. Sometimes their mental state becomes so disturbed that it is necessary to terminate the malaria. Albumin and casts are present in the majority of these cases. Large amounts of albumin and much increase in the number of casts should be watched very carefully. The appearance of blood in the urine is sufficient within itself to warrant stopping the malaria. Fever sometimes reaches such a great height that it constitutes a complication. We do not use drugs to control fever. High temperature is controlled entirely by hydrotherapy. In case the fever becomes too high and you wish it reduced, you may give three grains of quinine, which will usually lower the temperature one or two degrees and allow the patient to continue with the malaria after having a brief rest. Do not give over three grains. We have given five grains of quinine on several occasions, and this small amount has completely rid the peripheral circulation of all malarial parasites. It is necessary during the entire course of the malaria to constantly make blood smears in order to determine the number of parasites in peripheral circulation. This will give you more information as to the severity of the infection and the patient's resistance than any other laboratory work. A thin smear of blood is made—what we mean by a thin smear is one which has from fifty to seventy-five red blood cells to a field. The average case of malaria will have two to three malarial parasites to a field. If there is any increase over this amount, the patient should be given a small dose of quinine immediately, and the blood constantly examined to be sure that the parasites are not increased in the peripheral circulation over the amount above mentioned. It sometimes happens that during the course of the malaria the patients apparently will be getting along very nicely and will not present any symptoms which would indicate that they are about to break under the strain. Constantly checking the number of parasites in the blood will be your first warning; and in case of a sudden increase, if noted early and sufficient amount of quinine is given to control this, you can avoid coma and some of the other more dangerous complications. There is another condition which sometimes arises that will give considerable trouble —that is nausea and vomiting. This may be very persistent; and if the individual is not able to retain any food or water for forty-eight hours, the malaria should be terminated, giving quinine subcutaneously.

5. Termination of the Malaria.

The standard treatment which we use is ten grains of quinine three times a day for three or four days, then ten grains of quinine every night for eight weeks. The U. S. Public Service reports twenty per cent relapses from this treatment. Our relapses at the S. C. State Hospital have been somewhat higher—thirty per cent. Some of these malarial cases will recover spontaneously—fifty-three had spontaneous recoveries; they had no treatment following, and there were two relapses. There were fifty-six cases treated with atebrine. There were five relapses, 8.9 per cent. During the course of the quinine therapy, the patient is given each week one dose of neoarsphenamine and one of bismuth. This is continued until six doses are given.

6. Prognosis.

It is wise to acquaint the relatives of patients with the possibilities involved in the course of treatment. We tell them frankly that we are dealing with a chronic disease of the central nervous system and that the previous treatment for this condition has been very unsatisfactory, and that the malaria treatment is not any longer in the experimental stage; however, it cannot be said that it is entirely without danger, because some few patients suffering with this disease are going to react badly, regardless of what treatment is given. We can never tell how extensive the ulceration of the brain may be, and for this reason we cannot say which cases will be improved by the inoculation. We do not entertain any great fear as to the probable outcome; and, to be perfectly frank, the treatment in some instances seems to hasten the end. At the present this is the only remedy that seems to offer any hope of a cure, and personally if I had the disease I would want to take the treatment. There is nothing in the symptoms or the serological findings that will indicate which cases will respond to treatment

and which ones will not. There is only one thing to do—give the treatment and hope for the best. The statistics up to the present date show about 30 per cent who make a social recovery—that is, they will be able to go back and resume their former station in life. About 30 per cent will be arrested and the others will show no improvement, and the disease will run its usual course. There is one thing that malarial treatment usually does even when it does not benefit the patient mentally; it will prevent that bedridden stage when bed sores develop and the patient lives a vegetative existence. It is seldom now that we see a case which reaches this point, while in former years we always had quite a number in this particular stage. If it did not do more than this, I feel that it has accomplished a great deal. Improvement sometimes takes place during the course of the treatment or immediately following it; but improvement sometimes takes place as late as six months after the treatment has been completed, and therefore, before saying that the treatment has been of no avail, a six months period should elapse. In view of the results which have been obtained from this method of therapy, it is felt every case of neurosyphilis when contra-indications do not exist should be given the opportunity of having this treatment.

RIDGE MEDICAL SOCIETY

The Ridge Medical Society met the nineteenth of August at six o'clock in the evening in the hospitable home of Dr. and Mrs. E. C. Ridgell, where an excellent and varied supper was served by the Ladies Auxiliary.

The attendance wasn't quite as large as usual.

Drs. W. W. King and R. H. Timmerman made short reports of their observations and experiences at the pediatric seminar in Saluda, N. C.

Dr. W. P. Timmerman exhibited a healthy well developed baby with seven well developed toes on its left foot.

Dr. Wm. Weston, Sr. of Columbia in his usual forceful and inspiring manner made an interesting and instructive talk on foods.

At the conclusion of his address he was persuaded to talk again.

He later made an address to The Ladies Auxiliary which was highly appreciated and enjoyed.

A unanimous vote of thanks and appreciation was extended to Dr. Weston for his excellent addresses and to The Ladies Auxiliary for their excellent supper and entertainment.

The feast, meeting, etc. were to be held on Dr. and Mrs. Ridgell's beautiful lawn but owing to the inclement weather it was held in their elegant home.

Since our meeting Dr. E. C. Ridgell, one of our best and most outstanding citizens and enthusiastic member of our society died suddenly in his home.

He also was an active, enthusiastic churchman.

We deeply regret his passing.

D. B. Frontis, M.D.,
President Pro Tem.
W. P. Timmerman,
Secretary.

EDISTO MEDICAL SOCIETY

The Edisto Medical Society held its regular meeting Wednesday, August 28, 1935 at 2:00 P. M. at the Eutaw Hotel.

Dr. F. A. Hoshall, Professor of Orthopedic Surgery at the Medical College of the State of S. C., Charleston, S. C. read a paper on "Injuries About the Elbow Joint."

Dr. John M. Van de Erve, Dermatologist, Charleston, S. C., read a paper on "Acne."

H. M. Eargle, Secretary,
Edisto Medical Society.

THE JOURNAL
OF THE
South Carolina Medical Association

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SEPTEMBER, 1935

PIEDMONT POST GRADUATE CLINICAL ASSEMBLY A GREAT SUCCESS

Graduate medical education has come to stay in South Carolina, it is believed, as the trend seems to be irresistible in most other states. The type most applicable for us at present appears to be that fostered by organized medicine through the various constituent societies. We are fortunate in having a State Medical College to call on for sympathetic assistance at any time. In other words, some form of extension graduate teaching is the most practical plan for South Carolina if all of the doctors are to be reached. The three day clinical assembly at Anderson, September 3, 4, 5, had an enthusiastic attendance of more than one hundred. If this can be done in the Piedmont, there is no reason why it cannot be repeated in other sections of the State. The officers of the Anderson Clinical Assembly were reelected and the next Assembly will be held at the same place.

CONFERENCE OF STATE SECRETARIES AND EDITORS

One of the most important meetings in organization circles in American medicine is that of the Annual get together of the Secretaries of State Medical Societies and the Editors of State Journals in Chicago, where the Headquarters of the A. M. A. are located. This year the meeting will be held November 15, 16. The Presidents of State Societies are always invited and often add tremendous interest to the meetings. State Medical Journals at the present time compare favorably with medical journals in any part of the world. In America the major part of scientific contributions are presented through the State Journals. These Journals, however, have their problems, and an annual conference of Editors proves to be invaluable. Many of the Editors are also Secretaries of their respective State Societies and thus they have dual problems at such a conference. It is highly important that these conferences be well attended by as many of the officers of State Societies as possible. Here each year we meet with the Board of Trustees of the American Medical Association as well as the officers of the A. M. A. Important announcements of future policies of organized medicine are always discussed. At the present time one of the most vital subjects is that of the relationship of the government to the practice of medicine. It is therefore one of the most potential meetings of the year, for in order that solidarity of effort may be successful a clear cut general understanding must be agreed upon by the men who edit the State Journals or head the State Medical organizations.

THE STATE BOARD OF HEALTH

The Executive Committee of the State Board of Health met at Columbia, September 11 and was presided over by Dr. F. M. Routh, recently elected Chairman of the Board. Dr. Kenneth M. Lynch of Charleston and Dr. Walter R. Mead of Florence are the new members of the Board. Much routine business was attended to and a general consideration of the enlarging duties of the Board. It is clear that an enormous expansion of public health activities is in the offing when the funds from the Federal Government for the States become available. It is fortunate that in South Carolina under the law the State Board of Health is the South Carolina Medical Association and the Executive Committee the creature of the Association. This brings about a cooperation from a legal standpoint vouchsafed by few other states. This enables the profession of South Carolina to keep in close touch with all public health measures. It is highly important that the actual practice of medicine of a curative type be kept inviolate from the encroachments of public health measures as a general proposition. In South Carolina strong efforts are made to this end. It is not inconceivable that the private practitioner in this State may in his own office take over much of preventive medicine both to the profit of his clientele and to himself. This should logically lead to a curtailment of public health activities as now constituted rather than an extension . To accomplish this end, however, to the fullest extent it may be that another generation of doctors will have to grow up, coming out of the schools with a different viewpoint of the relationship of preventive medicine and curative medicine. The Medical College of the State of South Carolina has been a pioneer of teaching public health to its students. Other schools have followed in rapid succession.

As the State Board of Health enters upon the fall work, one is impressed with their desire to give the public the very best service within their power and to cooperate with the medical profession of South Carolina to the best of their ability.

THE FOURTH DISTRICT SOCIETY MEETS AT GAFFNEY, 4 P. M., OCTOBER 15

One of the largest District Societies in the South is the Fourth District. It has a membership of about 200 and an attendance of about one hundred every year. Dr. George R. Wilkinson of Greenville, Secretary, has sent out a call for volunteer papers. In the scheme of organized medicine in America the District Society is a very important place for real scientific presentations to be made. No time is taken up with routine business matters. Then there is the social feature, such as the luncheons, where the members are able to meet each other and exchange experiences. In every part of the State nearly every doctor is able to attend to some of his practice and the District meeting all the same day. The State Medical Association profits very significantly by the scientific atmosphere created at the District meetings. We bespeak a full attendance at Gaffney, for the programs never fail to be of vital interest.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 290 (25144), April 12, 1935
Service of Dr. Chamberlain

Student Robertson (presenting case history):

Negro male, age 32 years, stevedore, admitted Aug. 4, 1934, discharged Aug. 17, 1934, diagnosis: "Gastroenteritis; Lesion of Chest Wall." Readmitted Nov. 12, 1934, died Feb. 11, 1935.

Chief Complaint: Nausea, vomiting, pains in abdomen.

History: Says he has had nausea and vomiting for only ten days, but the same symptoms were given on the previous admission, with diarrhoea. The abdominal pain is griping in character, generalized throughout abdomen. Thinks he has had several chills, but denies fever. Draining sinuses on chest wall for 1 year, apparently following injury. Has lost much weight and has become very weak. No hematemesis. Family History: "No history of tuberculosis." Previous History: denies all but whooping cough and malaria (1930). Systems: No cough, no pain in chest. Occasional dyspnoea when walking. Diet: beef, hominy or rice for breakfast, no dinner, greens and rice for supper. Denies use of alcohol.

Examination: Very thin, in some pain and "chilled". Temp. 97.2, pulse 96, resp. 24, B.P. 75-50. Skin dry and almost scaly, m.m. of good color. Sclerae pigmented and slightly injected. Tonsils moderately inflamed. "Hard discrete post-cervical glands on left side." Thyroid not palpable. Chest: Fairly well developed. Two chronically discharging sores are noted on anterior chest, one along second intercostal space on right, the other, about the size of a quarter, in 4th left interspace just lateral to sternal border. Those are crater-like with a granulating center. Pressure over the sternum gives a bloody purulent discharge from the lower lesion. Lungs apparently normal. Heart: Apex beat in 6th interspace 2 1-2 inches from midline. Sounds loud and strong, regular in rate and rythym. No murmurs of friction rubs. Radial pulse very weak. No palpable arterial thickening. Abdomen: scaphoid. Some tenderness about umbilicus. No organs or masses palpated. Reflexes hypoactive. No abnormal reflexes.

Laboratory: Urine—Sp. Gr. 1020-1016, alb. 1 plus-0, hyaline casts 1 plus. Blood: Hb. 95-80 per cent D; RBC 4,240,000; WBC 13,100-6,000; lymphos 62-45 per cent; polys 21-45 per cent; large monos 16-5; eosinos 1-3; basos 0-2 per cent. Appearance of erythrocytes relatively normal. Feces: occult blood 4 plus, 3 plus, otherwise negative. Spinal fluid (11/14): 13 cells per cu. mm., lymphocytes predominating; globulin and sugar "negative." Blood and spinal fluid Wassermann neg. Test meal (alcohol) free HC1 9, 5, 11; other elements normal. Sputum: no t.b. X-Rays of chest, sternum and g-i tract: see chart. Mantoux 3 plus. Culture of fluid from sinuses showed staphylococci present. No fungi present in smear. Culture of feces for t.b. negative.

Course: Temp. showed a low-grade daily rise, seldom above 100, frequently remaining normal for some time. Pulse slightly more rapid in proportion to temperature, generally following the same course. Respirations 18-24 during entire stay. No remarkable change in condition occurred during hospital stay. Was given a try on small doses of neoarsphenamine, without effect on the sinus tracts or general condition. Gradually became weaker, tending to be stuporous towards the end. Died Feb. 11, 1935 at 5:45 A. M.

Dr. Chamberlain (conducting): Mr. Barr, will you open the discussion?

Student Barr: We have here a negro male, who, on both hospital admissions complained of nausea, vomiting, diarrhoea and griping pains in the abdomen, so that on the first admission a diagnosis of gastro-enteritis was made. He was quite emaciated, his temperature was subnormal and his blood pressure very low. Pigmented sclerae were noted on his second admission. There was apparently some bleeding from the gastro-intestinal tract, altho we do

not know the circumstances under which this stool examination was taken, and hence cannot say if meat had been excluded from the diet. The blood count showed a lymphocytosis. The whole picture rather suggests a tuberculosis, but whether primary in the intestinal tract or in the lungs I cannot say. There were no positive findings in the chest. To come back to the pigmentation: was any other abnormal pigmentation noted than in the sclerae?

Dr. Chamberlain: He was very heavily pigmented all over, a very dark-skinned negro.

Student Barr: I would like to see his X-rays.

Dr. Camberlain (demonstrating X-rays): The only positive X-ray finding was an indefinite clouding in the upper portion of the right chest, and whether this indicated lung disease or corresponded with the lesion in the chest wall, the x-ray did not show. The clouding was in the region of the articulation of the upper ribs on the left with the sternum, as you can see here. The reontgenologist, after being informed of the condition in the chest wall, doubted that the tissue change accounting for the shadows noted was in the lung itself. The third chest film, taken December, gave the same impression.

Student Barr: With the blood count, the continued low-grade fever, and the progressive weakness, we must think of tuberculosis, probably generalized. The symptoms of marked weakness and asthenia and the definite hypotension, suggest very strongly the syndrome known as Addison's disease, especially when occurring, as they are here, in an individual already suspected of being tubercular. Generalized glandular enlargement is frequently found in this clinical syndrome; in this case, there was no generalized enlargement of the lymph glands, but a number were palpated in the neck. Abnormal pigmentation was not noted in the skin or mucous membranes of this man, but I imagine that such an observation would be very unreliable in one of his race. The sclerae are pigmented.

Dr. Chamberlain: And I suppose the fistulous tracts on the chest suggest bone tuberculosis. Mr. Dusenberry, will you continue?

Student Dusenberry: I agree with the diagnosis of Addison's disease, especially because of the hypotension. The gastro-intestinal symptoms could be those associated with most cases of Addison's disease, or they could be an actual tuberculosis enteritis. I do not believe that we can say that there is a generalized tuberculosis, as no findings could be detected in the chest, by x-ray or otherwise, and the fever curve and the blood counts do not suggest a very active tuberculosis infection. The location of the apex of the heart in this case is rather unusual; the heart does not appear to be enlarged, but possibly somewhat displaced. This suggests an inflammatory condition in the mediastinum, and would probably be in association with tuberculous lymph glands in the mediastinum, or with the same process that produced the sinus tracts, whatever that may be. But I believe that tuberculosis of the adrenal glands is the important thing.

Dr. Chamberlain: Mr. King (D.I.C.) what do you think of the sinuses in the anterior chest wall.

Student King: I believe that these sinuses lead to a tuberculous infection somewhere in the chest, probably in the glands of the mediastinum, probably passing directly thru the sternum.

Dr. Chamberlain: Mr. Lemkin, what do you think of the low hydrochloric acid content of the gastric secretions?

Student Lemkin: I don't know how to explain that. As regards the rest of the case, I think that an old staphylococcus infection of the sternum and ribs should be considered. There is a rather definite history of injury to the chest wall, and staphylococci were recovered on culture. And the abdominal symptoms are so prominent that I believe he must have had a tuberculous enteritis.

Dr. Chamberlain: Do you believe that the gastro-intestinal X-ray studies can rule out a tuberculous enteritis?

Student Lemkin: The X-ray would probably detect a large ulceration, but a small lesion could easily be overlooked. I believe that his condition was tuberculous, and that he had Addison's disease.

Student McNulty: I think that the possibility of a malignant neoplasm should be considered here. If either a primary or a metastatic tumor involved the adrenal cortex, the symptoms of Addison's disease might be seen,

as well as with tuberculosis. I know the outcome in this case, but if I had the case on the ward I believe that I would suspect a malignant tumor.

Dr. Chamberlain: It seems that the senior students are better advised on this case than the visiting physicians were. The autopsy must have been a very striking one, for everyone to remember the findings so well. The consulting dermatologist (Dr. Ball) thought the condition was a tuberculous osteomyelitis, with the sinus tracts resulting from this condition. While he was in the hospital, all the attention was focussed on the lesions of the chest wall, and the general asthenia, while recorded on the chart, was not given especial attention.

Dr. Prioleau: Regarding the sinuses: when these are seen about the sterno-clavicular joint, they are frequently syphilitic as well as tuberculous.

Dr. Johnson: The lowered hydrochloric acid in the gastric juice has been commented on. I can see no special explanation for it in this case; it is probably related to the general asthenia.

Dr. Lynch: In 1855 Addison described the condition now bearing his name, and this initial record of adrenal insufficiency as given by Addison is the beginning of our knowledge of the endocrine complexes. Nothing of material importance has been added to his original clinical conception, except that the "feeble circulation," as he described it, is now recorded by the sphygomanometer as a hypotension.

The naturally pigmented state of this man's skin is doubtless the reason that the correct diagnosis was not made during life. This pigmentation is usually the striking symptom and finding in such cases, altho the general asthenia is almost as striking. The emphasis placed upon the pigmentation noted in the sclerae is subject to question, as that is a very common finding in all negroes, especially the very dark-skinned ones.

The upper skin sinus of the chest wall communicated with an irregular punched-out tuberculous area in the sternum. Beneath this sternal lesion the superficial mediastinal tissues were heavily infiltrated. The thymus was included in the post-sternal mass when it was removed, and could be recognized only by the microscopic sections. It was definitely hyperactive, and that finding is a very common one in association with extensive destruction of the suprarenals.

The lungs showed a marked fibrosis of the pleural surfaces, with dense adhesions about the anterior mediastinum and the apex of the lung. There was no definite open cavity in the lungs, but there were several encapsulated caseous areas which might well have been small cavities at one time. These were manifest grossly in the posterior aspect of the right upper lobe as surface scars. The lungs were quite heavily fibrous thruout, with smaller and more active tuberculous areas occasionally evident. There was also a very heavy dust deposit thruout the lungs, with a large number of the small bodies usually thought to be pathognomonic of asbestosis. Upon questioning his relatives after death it was learned that he never worked in asbestos, but that he had been employed for some time in a coal shute.

There were small, scattered, relatively inactive tubercles in the spleen, lymph nodes and liver.

The suprarenal glands showed large areas of caseation necrosis, with practically complete obliteration of the glands, so that they were recognized with great difficulty in the microscopic studies. This disease of the supra-renal glands is the background for the syndrome of Addison's disease in this case, and tuberculosis of these glands is said to be the pathological lesion in about 80-90 per cent of the cases, others being due to primary or metastatic new-growths there, or to other destructive lesions of the suprarenal. While this is well-recognized as the essential lesion in the syndrome, still we are no nearer the actual endocrine explanation of the gastro-intestinal symptoms, the skin pigmentation, the hypotension and asthenia than Addison was in 1855. Addison thought the skin pigmentation was due to a "defect of the coloring matter in these parts," the metabolic control of which he suspected to reside in the adrenal. That is still the present concept.

Now we know that humans cannot live without the cortex of the adrenal gland, and with the very recent addition of cortical suprarenal extracts to the therapy of the disease, cures or at least arrests are affected. This represents our

only advance in the understanding of the condition since Addison's classical monograph.

Acute adrenal insufficiency also occurs, usually due to infarction, abscesses or hemorrhage. Addison recognized these acute conditions, but apparently did not note that pigmentation is apt to be absent in the earlier cases.

There was no intrinsic lesion of the gastro-intestinal tract, and the bowel contained no grossly recognizable blood.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

SIMPLIFIED MANAGEMENT OF AFTER-CATARACT—DR. D. T. ATKINSON

One of the big drawbacks to the conclusion of the case in a cataract operation is the secondary cataract.

"The most probable cause of the problem, however, is that the disintegrating effect of the aqueous humor changes the character of the capsule."

'Parts of a new lens grow from minute parts to lens tissue adherent to the capsule.' I have found that Thyroxine aids in dissolving these opacities; as it also does in the next heading.

'A soft lens cortex with much lens remaining increases the per cent of secondary cataract, especially if much lens matter has been left in the anterior chamber.'

The great difficulty to the cure of this trouble is from the opposite problems, one is that "the secondary cataract moves with the needle knife and is not cut," and the other is that the secondary cataract lacks elasticity and when cut does not gape.

"The double knife needle aids in solving these troubles, 'but is hard to use.' Other means of treatment are the incising and removing of parts of the cataract. V shaped incision in the capsule, or openings in the capsule by punch forceps." This I think would be hard to do, but to catch and twist the capsule on a special straight forceps is easier and often efficacious.

Dr. Atkinson says that only three methods have stood the test of experience. (a) The single needle or narrow knife operation; (b) the operation with the double needle; (c) the extraction of all or part of the capsule together with the adherent iris if the pupil is agglutinated.

The objections and advantages of the single needle operation are known to all who have used it.

The objection of the double needle operation is in small hospitals that one lacks the trained assistant to steady the eye.

In the removal of parts of the secondary cataract catch the cataract as far from the incision as possible and remove it by elevating the blades of the forceps. In thus doing there is less injury to the ciliary body than if direct traction is made on the capsule. Or the capsule and iris may be cut with scissors and removed and clipped off.

Dr. Atkinson then describes a new method that he has found successful. It is:

"Presuming that the operation is to be done on the left eye, a von Graefe knife blade downward is inserted through the cornea three millimeters from the limbus and at a point corresponding to two o'clock on the clock dial. The knife, carried inward, penetrates the iris at the junction of its outer and middle third. The handle of the knife is then depressed and its point is made to emerge into the anterior chamber at the opposite side, at a corresponding point in the iris at which it entered. The tip of the knife is now passed outward through the cornea, emerging three millimeters from the limbus at a point corresponding to ten o'clock on the clock dial. This section is then carried downward, the knife being given a to and fro movement as it cuts. Soon the taut iris engaged by the knife gives way, its elasticity causing the incision in the iris to gape, thus creating a permanent pupil. This will occur before the corneal section, while being carried downward, gets much beyond what would correspond to points represented by three and nine on the clock dial. The knife is then withdrawn."

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"THE DIAGNOSIS AND TREATMENT OF ACUTE INJURIES TO THE HEAD"

This is a partial review of an article by Dr. Walter Dandy of Baltimore published in the J. A. M. A. September 2, 1933.

In a previous issue the diagnosis has been discussed and in this issue the treatment will be considered.

If the skin is broken, the wound should be cleansed and the devitalized tissue excised—if the condition of the patient permits—so as to prevent infection, which otherwise would almost certainly follow. X-Ray examination should not be made until it is certain that the condition of shock is over and life is safe. It is a severe tax upon a critically ill patient and it offers little as regards diagnosis and indications for treatment except in depressed fractures, and even here it is not indispensable.

Haemorrhage and edema follow injury to the brain. The result is increased intracranial pressure. In only one type of case can the cause of the increased pressure be removed—that is in extra-dural hemorrhage. In all other cases the effect of the injury—increased pressure—must be treated. The treatment for extra-dural hemorrhage consists in evacuating the haematoma and ligating the bleeding artery. In these cases it is important that the diagnosis be made early so that this life saving procedure may be instituted. While not pathognomonic, a very good indication of this condition is a lucid interval between the immediate shock and the deepening coma one-half to several hours later. An additional sign is a motor weakness beginning in the face on the opposite side and extending to the arm and to the leg.

In the treatment of increased intracranial pressure lumbar puncture is decided as both useless and harmful. It results in trauma to the brain. The immediate apparently beneficial effect is followed by a deeper state of coma. In the case of a subdural or extradural haemorrhage, lumbar puncture, by relieving pressure, gives the haemorrhage more room to extend and results in stripping more branches of the middle meningeal artery. The author is positive that no case has been saved by this procedure, and that a number of cases have been lost which otherwise might have been saved.

The injections of hypertonic solutions in order to lower pressure are placed in the same category. There is an apparent immediate benefit, but the adverse chemical reactions following such an injection result in an increased pressure.

The only treatment recommended up to a certain point is absolute rest. Seventy (70 per cent) per cent of all cases with severe head injuries will recover spontaneously. If left alone the remaining thirty (30 per cent) per cent will die. From this group one third can be saved by subtemporal decompression if well timed and properly performed. The remaining twenty (20 per cent) per cent are beyond redemption. If a patient dies within the first five or six hours, there is no possibility of saving him by an operation—the one exception being an extradural haemorrhage. It at the end of five or six hours consciousness improves or remains unchanged, and the pulse, respiration and temperature remain within the limits of compensation, the chances of a spontaneous recovery are good. If after this arbitrary period coma deepens and other signs indicate a break in compensation, recovery is practically impossible except by constant relief of pressure. This can be accomplished only by subtemporal decompression, which should be done under local anesthesia.

In brief, the treatment recommended is to keep the patient quiet and do the least possible in the way of active treatment, avoiding in particular roentgen examination, lumbar puncture, and intravenous injection of hypertonic solutions. The patient should be carefully and constantly watched for signs of a break in compensation due to increased intracranial pressure and when necessary, there should be done a right subtemporal decompression. An extradural haemorrhage should be watched for and when diagnosed, relieved by operation.

SOCIETY REPORTS

ANDERSON COUNTY MEDICAL ASSOCIATION RESOLUTIONS, DR. SAMUEL CLARENCE DEAN

"Know you not that a prince and a great man has fallen this day in Israel?"

There is no one in this community who has not been made aware of Dr. Dean's death. The press has hearaled the news of his passing, we have seen the beautiful floral tributes that loving friends have sent to honor his memory; we have heard the ministry as they attempted to comfort the bereaved family as they performed the last sad rights of all that remained of his mortal body. Yet in spite of all this indisputable evidence of his passing it is difficult for those of us who were closely associated with him to realize that he who fought the last great enemy so courageously has himself been pierced thru the heart with a dart.

We feel greatly honored that this society has made us their spokesman on this occasion and commissioned us to prepare a suitable tribute to his memory. In attempting to discharge this obligation we are overwhelmed with the inadequacy and the futility of words. What more can we possibly say that those who knew Dr. Dean do not already know or what tribute of words could possibly do justice to his life. In the presence of this mysterious dispensation of providence we are dumb and for the expression of our feelings and emotions we have no language but a cry. In the fewest and simplest words we wish to bear testimony of our respect, our admiration, our love for Dr. Dean.

Dr. Dean lived so intensely, he was so vibrantly alive that it is most difficult to think of him in terms of one who has been. He had not lived out his alloted span of life, age had not bowed his form, nor slowed his steps, nor robbed him of the joy of living. Disease had not palsied his hands or depleated his inexhaustable supply of energy. He was in the zenith of his usefulness and service. With dramatic swiftness the column was broken in its strength, his sun went down at noon tide and as he passed from vibrant living to the inaction of death. Such dispensation of providences are beyond our understanding. In his passing the profession has lost an outstanding leader, the community has lost a valued public citizen, and we have lost a friend.

His life is not to be measured by its strength but by breadth and in the broad field of endeavor he accomplished more in his short life than most of us who have lived much longer. He crowned in each days life more of actual living than most men ever knew.

Let us not think of him as one who has been called away before he had time to complete his work but rather as one who has quickly and gloriously finished his alloted task.

Dr. Dean possessed the three requisites of a good physician, he had knowledge, he had the powers to observe and he kept an open mind. While he excelled in surgery he was a good physician before he was a good surgeon. Dr. Dean loved his work, it was his master and the joy of his life to watch the success of his work, to all his patients he gave freely and profligately of his time and energy. No task was too small to merit his painstaking care and none too difficult or hopeless to deter him from rendering all assistance our profession had to offer. He was not to be rushed into operating by the wishes and opinions of others, but must be assured for himself that an operation held out a reasonable hope of relief. In operating he made no effort at speed or display but concentrated all his energies on the safety and welfare of his patients. He was thorough yet conservative. He was a good surgeon and will be greatly missed in his community.

Dr. Dean was so unassuming, so modest, so free from professionalism, that now we have lost him we are just beginning to recognize his true worth. He was friendly to all but familiar with none. He neither knew or practiced any of the tricks of the trade. He had no sales talk but depended upon the merit of his work to sell his services. His code was fair competition and the golden rule was the rule of his life. These lived by, at times to his own detriment. When Dr. Dean located in Anderson he had no

pull but his pleasing personality, his determination, his willingness to work, and his attention to the so called small things carried him far as a surgeon and if his life had been spared he would have gone much farther but death cut his useful career short.

The medical profession of this community takes this occasion to salute the memory of Dr. Samuel Clarence Dean, a good physician, a skilled surgeon, a valuable citizen and an all around good fellow. Pax Vobis Cum.

Committee,
Anderson County Medical Society.

P. S. Read before Anderson County Medical Society, July 10, 1935. For publication in South Carolina Medical Journal.

COLUMBIA MEDICAL SOCIETY

Crystal Room, Columbia Hotel, Monday, September 9, 1935 at 8:30 P. M.

Regular Scientific Meeting, Program—

1. "Hyperthyroidism", Dr. Geo. T. McCutchen.

2. "Pulmonary Aneurism"—Case Report by Dr. L. E. Madden.

O. B. Mayer, M.D.,
President.

Benj. Rubinowitz, M.D.,
Secretary.

BOOK REVIEWS

EMOTIONS AND BODILY CHANGES, A SURVEY OF LITERATURE ON PSYCHOSOMATIC INTERRELATIONSHIPS, 1910-1923, by H. Flanders Dunbar, M.D., Ph.D., Departments of Medicine and Psychiatry, Columbia University. Published for the Josiah Macy, Jr., Foundation, by Columbia University Press, New York, 1935.

Introduction
Part One: Orientation and Methodology
I. Problem of Integration and Differentiation.
II. Problems of Acute and Chronic Illness.
III. Problem of Measurement.
Part Two: Organs or Organ-Systems
IV. General Considerations Relating to Organs or Organ Systems.
V. Nervous System.
VI. Musculature.
VII. Endocrines.
VIII. General Metabolism and Heat Regulation.
IX. Cardiovascular System.
X. Respiratory System, Including Oto-Rhino-Laryngology.
XI. Gastrointestinal System.
XII. Genitourinary System and Gynecology.
XIII. Special Sense Organs Exclusive of Skin.
XIV. Skin.
XV. Bones, Including Odontology.
Part Three: Therapeutic Considerations and Concluding Remarks
XVI. Therapeutic Considerations.
XVII. Conclusion.
Bibliography.
Index.

Every doctor has frequent cause to observe the effect of the emotions on his patients from day to day. This book describes these effects in considerable detail. Many case histories have been presented. A chapter is devoted to therapeutic considerations though this is very short. Perhaps our knowledge is quite limited along this line as yet. One is impressed by the extraordinary scope of the bibliography. One hundred and twenty four pages of the entire 595 pages have been devoted to this. One fourth of the book about. Perhaps it is well to have in one place such extensive references but it is rare to find a volume of this size devoting so much space to it.

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THE JOURNAL
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JAUNDICE: ITS DIFFERENTIAL DIAGNOSIS

By
THOMAS M. PEERY, M.D.
Charleston, S. C.

In recent years a great deal of research, both clinical and experimental, has been done in the field of the normal and pathological physiology of bilirubin and related substances, but the lessons thus learned have not been fully applied to the diagnosis of the different clinical types of jaundice.

The work of Aschoff(1) and his students on the reticuloendothelial system, of Whipple(2) and his associates on the interrelationships of liver and spleen, and, most important of all, of van den Bergh(3) (1913 et seq.), have added greatly to our knowledge. Van den Bergh's introduction of the test which bears his name has given the clinician a relatively simple laboratory procedure of tremendous value, and this test, when coupled with examinations of the urine and feces for bile, and with complete blood studies, gives a definite guide to follow in the handling of cases of jaundice.

Before going into the clinical aspects of the problem it would be well to delve briefly into the metabolism of bilirubin from its precursor, hemoglobin. The normal life of the red blood cell is thought to be about 30 days(4), at the end of which time it undergoes spontaneous fragmentation. These red cell fragments are then taken up by the various cells throughout the body which collectively are referred to as the reticulo-endothelial system. In humans the most important depot of these cells is the spleen, with less important collections in the liver (Kuppfer cells), bone marrow, lymph glands and circulating blood. Aschoff and other workers have shown that bilirubin is formed by these cells from hemoglobin without any activity on the part of the liver. This bilirubin is released into the blood stream where it can be detected by the various clinical methods. It will remain in the circulating blood until eliminated by the kidneys or the liver.

In this connection it is worth while to review the structure of the liver lobule as illustrated by McNee's(5) excellent diagram. The liver cells are seen to compose a test-tube-like structure whose rounded end abutts the central vein and whose open end empties into the bile capillaries whence bile is carried into the larger biliary channels. The portal vein and the hepatic arteries send their fine branches between these tubes, forming the imperfectly lined liver sinuses which allow the blood to come into intimate contact with the liver cells.

As the circulating bilirubin reaches the liver, it is taken up by the liver cells and altered in some manner before being passed into the biliary system.

Thus we have two kinds of bilirubin: that kind normally circulating in the blood in very small quantities from red cell destruction, and the altered kind of bilirubin ("bile bilirubin") formed after passage through the liver cells. It is readily seen that the first form will be present in the blood in excess in cases of excessive blood hemolysis or in cases of liver damage, when the liver cells may be unable to convert it into the altered "bile bilirubin." The second form ("bile bilirubin") will be present in the blood only in cases in which there is obstruction to the biliary passages, with regurgitation of "bile bilirubin" into the blood stream. Either form,

From the Department of Pathology, Medical College of the State of South Carolina.

when present in the blood in excess, will produce the clinical state of jaundice.

It is in the differentiation of these types of jaundice that the van den Bergh test has its application. The addition of Ehrlich's diazo reagent directly to the diluted blood serum will give an immediately positive reaction, occurring within thirty seconds, when bile bilirubin is present, and this is the result obtained uniformly in obstructive jaundice (van den Bergh's direct immediate reaction). On the other hand, when unaltered bilirubin is present in the blood serum, the reaction will be delayed and not apparent for at least a minute, or possibly a positive reaction will be obtained only on the addition of alcohol (van den Bergh's delayed direct or indirect reaction).

It will be seen, on the basis of these statements, that jaundice can "be due to an increased production of bile pigment from hemoglobin (undue hemolysis) as a result of which so much pigment is presented to the liver cells that they are unable to excrete it and it remains in the blood. Or it may be due to the resorption of (bile) bilirubin which passes in normal amount through the liver cells, but which is unable to escape on account of obstruction of the bile passages."(6)

There is a third alternative commonly met with. An immediate direct reaction may deepen on standing, giving what is known as a biphasic reaction. This is due to an excess of both unaltered (hemolytic) bilirubin and of altered (bile) bilirubin in the blood. This biphasic reaction is given in toxic or inflammatory conditions of the liver cells, where the swollen cells refuse passage to hemolytic bilirubin and at the same time cause some obstruction to smaller biliary radicles. The various poisons that give known liver damage (chloroform, arsenic, phosphorus, etc.) usually give this type of reaction, as does acute yellow atrophy of the liver.

Those cases of jaundice due to excessive blood hemolysis or to direct liver cell damage constitute the cases of jaundice to be treated medically in large measure. While these cases frequently give diagnostic difficulties, they can usually be differentiated by careful clinical analysis. The history of familial jaundice is of great importance. Careful inquiry into exposure to medicinal or occupational poisons must always be made. Physical examination may show an increase or a decrease in the size of the liver, the presence of ascites or a palpable spleen. Blood studies may show the presence of one of the primary anemias or of the malarial parasite.

When the determination of the type of "medical" jaundice is satisfactorily reached, the course of therapy is usually easy in so far as we can go. As congenital hemolytic jaundice is presumably due to increased fragility of the red blood cells and their excessive destruction by the reticulo-endothelial system, splenectomy is frequently resorted to. It is a logical and usually a satisfactory method of treatment, but unfortunately its effects are frequently not permanent, as the other reticulo-endothelial depots throughout the body frequently hypertrophy, with a recurrence of symptoms, although usually less severe.

Other hemolytic forms of jaundice, as that of pernicious anemia, chronic malaria, snake venom poisoning, respond satisfactorily to therapy aimed at the etiological agent.

In that group of diseases where direct liver cell damage is the important factor, as acute or subacute yellow atrophy of the liver, poisoning by mushrooms, chloroform, phosphorus, etc., the important part of the treatment is "fortification" of the liver by ample carbohydrates, as recently pointed out by Ottenberg(7). It has been shown experimentally by Whipple(8) and others that large quantities of glycogen in the liver lessen the likelihood and severity of liver damage when exposed to toxic agents. Clinical experience has shown that carbohydrate feeding is good. In severe cases it is usually necessary to give glucose by vein, in less severe cases carbohydrate may be administered as candies, orange juices or starches. As much as 500 gms. of carbohydrate should be given daily where possible, and insulin should be used to insure utilization. Protein and fat intake should be cut down as low as possible, thus lessening the work load of the liver, but the protein intake should not be below the minimum body requirement, which is usually estimated at about 1 gm. daily per kilo body weight.

Those cases giving the positive direct van

den Bergh reaction constitute the group known as obstructive jaundice, and it is this group that frequently requires surgery for relief. The commonest factor causing obstruction is probably calculus in the hepatic or common bile duct. Such a stone is much less apt to give pain than is one in the cystic duct, because the common duct, containing practically no muscle fibres, is unable to go into painful spasmodic contractions. Obstruction by stone is commonly incomplete or intermittent, and therefore the bile content (and the color) of the stools frequently varies from day to day. The depth of jaundice in the skin may also vary considerably, but it is much more satisfactory to rely on frequent quantitative determinations of blood serum bilirubin, as by the icterus index or the quantitative van den Bergh. Other conditions producing obstructive jaundice seldom show such variation. Since obstruction of the biliary duct prevents the elimination of other substances excreted by the liver, notably cholesterol, determinations of these substances in the blood are also of value, as their concentration likewise varies with the degree and constancy of the obstruction.

The clinical picture of the usual case of carcinoma of the head of the pancreas with obstructive jaundice is well known: slowly progressive painless jaundice, usually in an elderly individual.

Other conditions such as cysts, aneurysms, promary and metastatic tumors occasionally cause obstructive jaundice, but they are not to be discussed here.

Once a diagnosis of obstructive jaundice has been made by a careful analysis of the data at hand, the individual should be explored as soon as possible. It is not advisable to postpone operation long in the hope that jaundice will lessen. Usually the tendency to hemorrhage increases instead of lessening. It is frequently advisable to give small blood transfusions before operation in the hope of increasing the coagulability of the blood. Glucose, by vein and otherwise, should be pushed vigorously.

SUMMARY

1. The van den Bergh test is one of the most valuable aids in the differential diagnosis of jaundice, and its correlation with clinical findings and other laboratory procedures will permit an accurate diagnosis in most instances. Parenthetically it might be stated that the van den Bergh test is not uniformly reliable, but neither is any other laboratory procedure. Occasionally a single case may give different reactions at different times, but in the great majority of cases it gives more information than any other single test.

2. Obstructive jaundice is usually a surgical condition, and early operation is advisable.

3. Those cases of jaundice due to liver cell damage are best treated by a high carbohydrate intake.

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THE TREATMENT OF SEVERE CUTANEOUS BURNS

By

J. N. WALSH, M.D.,
Moncks Corner, S. C.

Burns may be defined as a destruction of tissue produced by heat or chemicals. They may be trivial or of such a nature as to permanently scar, deform and cripple the patient. Burns are caused by contact of the body with various agents such as fire, hot water, hot oils and greases, electricity and chemicals. In this section, particularly during the winter months, fire burns of a serious nature commonly occur because of open fires. These burns are usually deep, and often extensive as regards the skin area involved.

Burns are usually classified as first degree (erythema), second degree (vesical formation)

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and third degree (eschar or complete destruction of the skin). Burns may be further classified according to whether there is complete destruction of the skin with healing taking place by epithelial growth from the edges or whether there are islets of epithelium within the burned area from which growth may occur. With the second type of burn, healing is more rapid and there is less scarring.

The depth of the burn determines to some degree the prognosis, but the area of skin involved is the most important factor in the prognosis. A burn involving from one-third to one-half of the skin area is usually fatal. Burns of even less extent are often fatal, depending upon the location and depth of the burn. Burns about the upper part of the body, particularly the head, carry a less favorable prognosis, all other factors being considered. According to Davidson, 45 per cent of the deaths from burns occurring annually in the United States are among children less than six years of age.

A burn is a wound differing from ordinary surgical wounds in that we have destruction of tissues without loss of continuity. The reaction of the tissues is that of inflammation, namely, hyperemia and exudation, leucocytic infiltration, separation of the dead tissues, granulation and healing by epithelial proliferation. The inflammatory reaction produces early systemic effects varying with the extent of the burn. These are dehydration or concentration of the blood and a depletion of the chlorides. A burn of a relatively small area may cause a considerable increase in blood concentration, particularly in children. Concentrations as indicated by hemoglobin reading of 125 per cent may occur without serious danger, but a greater concentration, if maintained for any period of time, will probably result in death, particularly if a point of 140 per cent is reached. Underhill, in a series of experiments on animals, has shown that with a burn involving one-sixth of the body area there may be a loss of 70 per cent of the blood volume within 24 hours by transudation of the blood plasma beneath the burned area. A human being weighing 65 kilograms, or approximately 150 pounds, has approximately 5,000 cc. of blood. Applying these figures to a person of that weight, this would mean a loss of 3,500 cc. of the blood volume. The capillaries beneath the burned areas are injured with the resultant transudation of the fluid. This increased permeability of the capillaries is in one direction, namely from the blood to the tissues. The permeability of the fluids from the tissues to the blood is so decreased that a dose of strychnine which, when injected subcutaneously, will kill an experimental animal in 10 minutes has no effect when injected beneath or into the burned skin. This increased permeability of the capillaries lasts 24 hours, but the edema beneath the burned area persists for about six days.

The hemoglobin test is the most reliable index of the blood concentration and should be done frequently. We must remember that it is easier to prevent a marked concentration than to reduce the concentration after it has occurred. Large quantities of fluid are indicated until the period of rapid transudation of fluids beneath the burned area has passed.

The marked drop in the blood chlorides is interesting. Blood chlorides as low as 100 mlg per 100 cc. have been recorded in severe burns. Thirty-six per cent of the chlorides of the blood may be lost before there is a diminution of the blood chlorides, due to the power of the body to replace rapidly from the tissues the loss of water and salts from the blood stream. The chloride content of the entire skin surface is increased and there is a rapid passage of chlorides beneath the burned area. The chlorides which pass beneath the burned area may be considered as permanently lost to the body. Vomiting, which so frequently occurs, causes an additional loss of the body chlorides.

A decrease in the blood chlorides is observed in a number of conditions, all being characterized by a loss of fluid from the blood stream. Peritonitis, ruptured gastric ulcer and any acute abdominal condition accompanied by a production of peritoneal fluid shows a decrease in blood chlorides. Dehydration as from toxic vomiting of pregnancy and the diarrheas also produce this depletion. It is uniformly observed in lobar penumonia. An adequate supply of chlorides must be given to replace the chlorides lost from the blood stream.

Now in regard to the so-called toxin pro-

duced by burns. Experiments to determine a definite toxin have been conducted for the past eighty years. The evidence as regards the production and absorption of a toxin from the burned area is contradictory. Robertson and Boyd in 1923, in a series of well conducted experiments with ginuea pigs, concluded that there is a definite toxin circulating in the blood and apparently carried by the red blood cells. They found extracts from the skin and whole citrated blood to be toxic. The blood plasma had no toxic effect. The toxin was supposed to be a split protein product. Kapsinow in 1932 repeated these experiments with extracts from the burned skin prepared in a manner similar to that of Robertson and Boyd, and found the toxic effect to be variable. He found the toxic effect to be produced by alcohol used in preparing the skin extracts, and confirmed this by injecting alcoholic solutions of various strengths, which produced effects similar to those produced by the supposed toxin. Harrison and Blalock in 1932 obtained no toxic effect by the injection of large quantities of whole blood from burned dogs into healthy dogs. Fender obtained no toxic effect attributable to a toxin with extracts from the lymph glands of animals dying from burns, and a number of other investigators have failed to sustain the toxin theory. The experiments of Underhill showing the rapid passage of fluid from the blood stream to beneath the burned area and the lack of the absorption of drugs injected beneath the burned skin would further show the lack of toxic absorption. The clinical picture in severe burns differs in no way from that in other so-called toxic conditions in which we have a concentration of the blood and a depletion of chlorides; in other words, dehydration.

The first and outstanding symptom of a severe burn is shock. This may require vigorous treatment depending upon the extent and depth of the burn. All patients dying within the first thirty-six hours die with symptoms of shock. They complain of being cold, the pulse is weak and rapid, and the temperature is subnormal. Vomiting is a frequent symptom. Dehydration comes on rapidly and contributes to the symptoms of shock. Pain may be excrutiating in second and first degree burns. It must be relieved by suitable opiates as it also contributes to the shock. With burns of the third degree the nerve endings are destroyed and there is no pain. With these cases, however, there is usually severe shock because of the depth and extent of the injury.

Following the period of initial shock, all burned cases develop fever. This is unquestionably due to infection of the burned area. In patients not treated by the tannic acid method the rise in temperature occurs earlier as these cases do not have the barrier to bacterial invasion offered by the properly produced tannic acid crust. With the separation of the slough the way for bacterial invasion is opened and a continuous elevation of temperature usually varying from 100 to 102 degrees occurs until the slough has separated and the burn is clean. The application of any type of dressing which interferes with the free drainage from the area is followed by a return or increase of the fever.

During this slow and always painful period of healing a number of complications may develop. Malnutrition and secondary anemia are always present in some degree. They may be minimized by the proper treatment of the infection. Contractures and disuse-immobilization of joints, too, commonly occur. I have had two patients to die from intestinal hemorrhage presumably due to ulceration of the duodenum (Curling's ulcer). Pneumonia and bronchitis sometimes occur with burns about the thorax.

We wish to particularly emphasize that burns in children are much more serious than in adults. They withstand the shock and the dehydration poorly; and early, vigorous treatment must be applied.

TREATMENT

The treatment of severe burns should be directed towards (1) the relief of pain, (2) the relief of the symptoms of shock, (3) the cleansing and proper protection of the burned area, (4) the combatting of the concentration of the blood (dehydration), (5) the control of infection and complications, and (6) the promotion of healing.

1. Pain must be controlled by the immediate administration of adequate doses of opiates. It is most marked in first and second degree burns as the nerve endings are not destroyed. Pain

no doubt contributes to the symptoms of shock.

2. Shock is only seen in deep and extensive burns. Burns about the head, thorax and abdomen are commonly accompanied by shock. Injury to deep structures by heat transmitted through the skin must be considered as an added factor in the production of shock and as a cause of death. External heat should be applied by means of hot blankets or hot water bottles. The administration of fluids should be started at this time.

3. After the patient has been relieved of pain and shows reaction from the shock the treatment of the actual burn is begun. We wish to emphasize that the burned area must be adequately cleansed before the application of any medication. All blisters must be opened and all loose skin removed. This may be done with scissors and forceps and by gentle sponging with wet gauze. The administration of a light anesthetic or large doses of morphine and a thorough scrubbing of the burned area with green soap followed by alcohol and ether has been advocated. We usually wash the burned area thoroughly with soap and water and follow this with ether, but feel that the administration of a general anesthetic is rarely indicated. If grease has been applied to the burn, as is frequently the case, it must be thoroughly removed with ether. The patient is then placed under a covered cradle heated with electric lights.

Following thorough cleansing, applications are begun to the burned area. We have used picric acid and tannic acid, and find that the tannic acid treatment is the more satisfactory. Gentian violet produces a hard crust as does tannic acid and in addition it has an antiseptic effect, but this apparently does not prevent the development of infection, according to the results reported.

Since the introduction of the tannic acid treatment by Davidson in 1925, it has been used in strengths varying from 2 per cent to 10 per cent, and with markedly better results than those obtained by previous methods of treatment. The patients are comfortable; with proper cleansing, infection is reduced; and the morbidity is lowered. "The precipitated protein formed provides a protective coating against bacterial and mechanical action as well as against sensory and inflammatory irritation. The general comfort and easy handling of patients are promoted; the loss of body fluid is prevented; secondary infection, especially in superficial burns, is limited because of lack of favorable material for growth of organisms. The protective area of coagulated protein acts as a scaffold for the growth of epithelium. One of the important functions of the skin is the mechanical protection it affords by cloaking the body in a complete mantle of dead material, thus keeping the organism to some extent isolated from its environment. The formation of a crust or scab by tannic acid temporarily restores to the body some of the biological functions of the skin destroyed, thus allowing the organism to readjust itself to altered physiological conditions during a period when the patient if often struggling with shock."

Seegar in 1931 made a study of the tanning effect of various strengths of tannic acid solutions. He found that the solutions used were strongly acid and highly, astringent, tending to cause swelling and edema of the tissues and a too rapid fixation of tannin at the surface. These disadvantages are overcome by neutralization to the same hydrogen ion value as that of the blood. This neturalization is not accompanied by any loss of the tanning power of the solution and the full beneficial effects are preserved. This solution is made by dissolving 4 grams of pure anhydrous sodium carbonate and 25 grams of tannic acid in 500 cc. of water. We have used this solution on our last three burned cases and find it superior in that a tougher, more uniform crust is formed. This crust does not disintegrate as does that formed by a simple tannic acid solution. We expect to use it for all burns where tannic acid seems indicated.

The tannic acid solution may be applied by means of a spray gun or upon gauze dressings covering the burned area. Gauze dressings have the disadvantage that they frequently stick to the burn and are quite painful to remove. We use an ordinary Flit gun that has been previously boiled, with very satisfactory results. The burned area should be sprayed at least twice each hour, and in twelve to eighteen hours a satisfactory tan is formed. The

tanned area must then be allowed to dry thoroughly and no moisture allowed to come in contact with it until sloughing begins. This method is used for burns about the body and extremities. For burns about the face and eyelids we have used tannic acid 5 per cent in a water soluble base, which is sold under the trade name of *Amertan,* with very satisfactory results.

4. With severe burns the concentration of the blood is rapid and may attain a considerable degree at the end of six hours. The water balance of the body is disrupted and fluids must be administered continuously in adequate amounts. A safe rule is 1,000 cc. of fluid for each 25 lbs. of body weight during the first twenty-four hours. This is given intravenously and subcutaneously in addition to fluids by mouth if the patient retains them. The ideal way to administer the fluid is by continuous venoclysis. This method has not been very satisfactory in my hands. An intravenous injection every four hours or an intravenous injection alternated with hypodermoclysis is entirely adequate. Fluids must be continued parenterally until the patient is taking them well by mouth and the urine output has increased to approximately normal limits. Normal saline, Runger's solution or Hartman's solution may be administered. Glucose is not necessary and concentrated solutions of any kind are contraindicated as they force a body with a disrupted water balance to give up more water from the tissues.

5. After the patient has been carried over the period of shock and dehydration, he is then relatively comfortable until the slough begins to separate. If the burn has been properly cleansed fever should not be high. The separation of the tannic acid coating usually begins about the tenth to fourteenth day and may not be complete for a month. Areas which do not harbor pus should be allowed to remain but all softened areas and areas beneath which pus forms must be cut away. This is usually quite painful and an opiate may be required. At the time the crust comes away it is often noted that extensive healing by epithelial growth has occurred over many parts of the burn. The areas over which there has been complete destruction of the skin show the most infection. Wet dressings of normal saline solution promote drainage and help to clean up the infection. Dakin's solution may also be used with gratifying results, but it causes the patient much pain. We have obtained our best results in the cleaning up of infection with picric acid solution. We have been using a 1/4 of 1 per cent solution in 8 per cent glycerine. This solution is of the same surface tension as the tissue fluids. Picric acid is antiseptic, analgesic and coagulant. It is these properties that account for its extensive use in the treatment of burns. A wet dressing of picric acid solution applied over a large granulating area markedly promotes the comfort of the patient and causes a rapid improvement of the infection.

Complications such as pneumonia and bronchitis sometimes occur and they must be appropriately treated. They distinctly add to the mortality. Intestinal hemorrhage is usually fatal. Anemia and malnutrition must be combatted by the control of infection, the stimulation of appetite, and the use of suitable hematopoietic agents.

6. To stimulate the growth of epithelium, we have been using Bettman's scarlet-red oxquinoline gauze. This causes a rapid proliferation of epithelium and the early healing of burns in which all the layers of the skin have not been destroyed or in which we have scattered islands of epithelium. With deep burns the proliferation of granulation tissue is much more rapid than the growth of epithelium. As the granulation tissue thickens organization takes place at the base with the formation of fibrous tissue. These are the areas that give us the heavy, thick scars. These areas, if very extensive or in the region of joints, should be skin grafted early. If they cover regions such as the popliteal space, the axilla or elbow, the part must be kept extended to prevent the fusion of contiguous surfaces and the development of disabling contractures.

In conclusion, I may say that the treatment of a severely burned patient requires careful nursing and constant attention on the part of the physician. The patience of the injured person is always tried, and often that of the physician. We may expect results according

to the pains-taking care given the individual case.

DISCUSSION

Dr. W. H. Prioleau, Charleston:

Dr. Walsh has covered the subject from both a theoretical and a practical standpoint. I can only emphasize (and I can not overemphasize) several features. First is the treatment of the shock. This is most important. Next is the asepsis of the area—the cleansing of the area before the tannic acid is applied. Most of us see cases after croton oil and things of that nature—even automobile grease—have been put on. All of this has to be cleaned off, and cleaned off thoroughly, before the tannic acid is applied. Then after a few days we have to be on the look out for infection under the tanned area. If the tanned membrane is very thick, the infection can not break through. Should infection be present it is necessary to make incisions for drainage or peel off the tanned membrane with a sharp knife. Another point is that the tannic acid is effective only if applied within the first few hours after the burn. After this it simply forms a superficial crust and messes things up. If we see them later, we have to use some other method of treatment.

Of great importance: do your grafting early. If you wait, the less the blood supply is to that region, and the less likelihood that the graft will take. What type of graft? For this purpose, I think the simplest and best graft is the deep pinch graft. Pick up a bit of skin with a needle, cut it off and place it on the granulating surface. Apply them closely together. Most of them will adhere and grow. If you get only ten per cent of "takes" that is a nice beginning, and you can put some more on after a week or two. But graft early in order to prevent contractures and scar tissue.

Dr. S. E. Harmon, Columbia:

If you will excuse an expression from the chair, I should like to say something about skin grafting. I find that the pinch graft, as Dr. Prioleau has outlined, is a very good method. I think there is no other method that quite equals the pinch graft, the full thickness of the skin.

Dr. Walsh, closing the discussion:

I wish to thank Dr. Prioleau for his very kind discussion. I think the points he has emphasized are well emphasized and very well utilized in the treatment of a burn by tannic acid or any other method.

In regard to the application of tannic acid or any other crust-forming material, it is very essential that we have the burned area very well cleaned up before its application and that we watch it very carefully and remove that membrane in case infection develops.

I agree with Dr. Prioleau about early skin grafting. I have found that small whole-thickness grafts work very nicely. With a thorough cleaning up of the whole burned area we get a high percentage of takes.

SOCIETY REPORTS

SEVENTH DISTRICT MEDICAL ASSOCIATION, SEPTEMBER 19, 1935,

Manning, S. C.

Program

1. Invocation.

2. "The Endocrine Background of Diabetes Mellitus," Dr. C. P. Osteen, Sumter, S. C.

3. "Urological Symptoms Resulting From Pathological Conditions of the Female Urethra," Dr. G. Aubrey Hawes, Charlotte, N. C.

4. "The Handling of Duodenal Ulcer," Dr. LeGrand Guerry, Columbia, S. C.

5. "Tumors of the Brain," Dr. E. P. Fincher, Atlanta, Ga.

6. "Bronchoscopic and Clinical Observations in Bronchial Obstruction and Bronchiectasis," (Lantern slides and moving pictures), Dr. E. P. Fincher, Atlanta, Ga.

7. Case Reports.

8. Election of officers.

President, Dr. W. Scott Harvin, Manning, S. C.

Secretary, Dr. Carl B. Epps, Sumter, S. C.

THE JOURNAL
OF THE
South Carolina Medical Association

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OCTOBER, 1935

MEDICAL COLLEGE OF SOUTH CAROLINA TO CELEBRATE FOUNDERS' DAY EXERCISES

On November 13th the Medical College of the State of South Carolina will schedule the second annual celebration of Founders' Day, in commemoration of the first opening exercises of the College one hundred and eleven years ago.

In November, 1824, the College opened its doors to candidates for the medical degree in the then new building, erected for the purpose, at the West end of Queen Street.

DR. DAVID RIESMAN'S LECTURE

The Founders' Day Lecture will be delivered at the evening banquet by Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania, Philadelphia.

In addition to the good fortune in having Dr. Riesman as the lecturing guest of the occasion, it is singularly appropriate that the lecturer should come from the University of Pennsylvania since all of the medical members of the first Faculty of the Medical College were graduates of that institution, which is the oldest medical school in the United States.

Dr. Riesman's lecture will be the feature of an all day program with special clinics and clinical lectures and conferences at the Roper Hospital and in the Medical College laboratories from 10 A.M. until 5 P.M. It is anticipated that Dr. Riesman will also participate in the clinics and will speak before the Medical History Club at a luncheon meeting.

A large attendance of the many alumni and of other physicians is expected for the day as well as for the evening banquet. It is also anticipated that there will be present representatives of other medical institutions and from the other colleges of the State.

Detailed announcement of the program will be published and mailed to members of the medical profession at a later date.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

INFLUENCE OF ANATOMIC STRUCTURE IN DISEASES OF THE NOSE AND EAR

Emanuel U. Wallerstein, M.D.,
Arch. Otol., July, 1935, p. 16.

Immunology, bodily resistence, virulence of infection—have their part but—as do endocrine influence and exudative diathesis, but a closer study of diseases of nose and ear would reveal the prime importance of the anatomic features. This study is of value in the proper understanding of the development of disease, its progress, its symptoms and the rationale of treatment—operative as well as medical.

As for instance (1) a primary mastoiditis may be a case of mastoiditis secondary to otitis media but its connection masked by a small aditus, a small antrum, or poorly developed mastoid cells.

(2) Gradenigo's syndrome is an associate of extremely pneumatic temporal bones permitting the easier spread of infection to the petrous tip; the infection may also spread by the peri-labyrinthine cells.

(3 That the prompt healing of a radical mastoid was prevented by Eustachian Tubes that permitted easy passage from the postnasal space to the middle ear.

(4) That as the pneumatization of a mastoid decreases the tendency to intracranial complications increases, and in such diplocic mastoids the classical symptoms of mastoiditis are often absent.

(5) Thrombosis of the lateral sinus is most frequently on the right side, because the right sinus is more forward on that side and consequently more in position to be involved.

(6) Some of Wittmaack's conclusions are:

a. Infection of the middle ear occurs through the Eustachian tube and is favored by pathological pneumatization of the temporal bone.
b. The development of chronic suppuration is favored by disturbance in pneumatization by a high degree of hyperplasia of the mucous membrane.
c. Acute otitis media is more usually in a temporal bone with pneumatization normal or near normal, the chronic suppuration occurs in temporal bones with pathological pneumatization.
d. Chronic suppuration is more common in its course, is predetermined by the severity and extent of arrest in temporal bone pneumatization.
e. In intracranial involvement it should be determined if it arises by contact or by blood transmission.
f. Blood stream transmission is more apt to occur in cases pathologically pneumatized because of the greater intercommunication between mastoid tissue and dura.

In the nose the following anatomic facts are of importance:

1. Marked orbital extension of the ethmoidal cells render intranasal surgery futile.

2. Bony septums in the antrum or the location of the antral floor below that of the nose indicate a radical antrum operation.
of sinus disease as is shown in the Negro race.

Sphenoid disease is increased by a lessening in the size of its opening.

Optic nerve involvement increases with the proximity of the sinus and thinness of the dividing partition.

Some frontal infundibulum drain into the antrum, the antra in these cases being merely a retention reservoir.

Rupture of an ethmoid into the orbit occurs more readily in the young because turbinates swell more and cause more obstruction to drainage at that age.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 292 (25835) MAY 3, 1935

Service of Dr. Hope

Student Barr (presenting case history):

White male, age 26 years, admitted March 23, 1935, died March 30, 1935.

Severe sore throat 11 days before admission with much external swelling. After poulticing for a week with flaxseed this subsided. Has had high fever since the onset of his trouble. 5 days ago began to blow "blood and corruption" from his nose, and this has continued to date. Swelling above and medial to right eye began 3 days before admission. Slight anorexia. No other symptoms. No headache.

Family history irrelevant. No previous illnesses.

Examination: Temp. 104, pulse 124, resp. 26, B.P. 110/80. Well developed. Rt. frontal region swollen, questionably crepitant, very tender, giving ptosis of rt. lid. Bloody purulent discharge from nose. Gums spongy, many teeth carious. Tonsils and pharynx reddened and congested. Chest: "Coarse rub in both bases, probably transmitted from throat. Otherwise clear." Heart: apparently not enlarged, sounds of good quality, no murmurs or arrhythmias. Liver questionably palpable 1½ inches below costal border. No other abdominal findings. Neurological: "KJ's not elicited; no Babinski or ankle clonus."

Lab: Urine—Sp. Gr. 1022, alb., sugar and acetone 0, pus, blood and casts 0. Blood (3/23, 3/25, 3/26) Hb. 70%, 65%, 58% (D); RBC's not given; WBC 10,500, 18,600, 23,100; Polys 89%, 80%, 84%; lymphs 10%, 14%, 10%; monos 1%, 3%, 2%; eosinos 0, 2%, 3%; basos 0, 1%, 1%; achromia 3 plus. Blood Kolmer and Kline neg. Spinal Fluid (3/24) normal pressure, slightly cloudy, total cells 250, polys 90%, globulin 2 plus, sugar 1 plus, no organisms seen. Culture neg. 3/26—clear fluid, normal pressure, total cells 18, polys predominate, globulin 1 plus, sugar 1 plus. X-ray of sinuses: See chart. Blood Culture (3/27) negative.

Progress: Temp. constantly 102 or above until A.M. of 3/26 when it fell to 100, followed by chill and sharp rise to 104.4. Septic curve after this, several chills, peak rising to 107 on day of death. Pulse followed temp. curve. Respirations 24-62, more rapid for last 2 days. Several hours after admission still had no headache but complained of pain in rt. chest. Stiff neck, positive Kernig, inconstant Babinski. Eyegrounds negative. Following spinal tap, patient complained of headache. 3/26 Drowsy, very toxic. Pulse very poor and thready. Both eyes painful, especially right. Stiffness of legs and neck. 3/27 Has swelling on right side of temporal bone, over right eye and over bridge of nose. Delirious. Chest clear except for a few fine rales in both bases, no cough. 3/28 Slight cough, rales over both chest anteriorly and posteriorly. Became comatose and died at 1 A.M. of 3/30/35. 3 blood transfusions of 250 c. c. each given (3/25, 3/27, 3/29).

Dr. Wilson (conducting): Mr. Fouche, let's hear from you first.

Student Fouche: This man gives a history of a severe sore throat with swelling of his neck, and this onset was probably a severe septic sore throat. The swelling in the right frontal region, with the continued high fever is suggestive of a purulent sinusitis, especially involving the sinuses about the right eye. This swelling may also indicate a thrombosis of the right cavernous sinus. The development of a positive Kernig, Babinski and stiff neck indicate a meningitis, probably resulting from the sinus thrombosis. I believe the patient died of a meningitis and a pneumonic infection, probably a terminal pneumonia. The lessening of the spinal fluid pleocytosis is very hard to correlate with the clinical picture.

Dr. Wilson: Mr. Yates, what is your analysis of the case?

Student Yates: I believe the whole condition started on a basis of a septic sore throat. The swelling, tenderness and suggestive crepita-

tion over the right frontal sinus are strong evidence of an acute frontal sinusitis, probably secondary to the infection of the throat. I believe a cavernous sinus thrombosis followed this but not a meningitis, because the clearing of the spinal fluid towards the end of a fatal meningitis is a very uncommon occurrence. I believe that the abstract indicates a brain abscess of some silent area more than it does a generalized meningitis. The changes in the spinal fluid are much more suggestive of a brain abscess than of a meningitis, as I would expect the fluid to be more purulent there. The pains in the chest may well represent embolism or a terminal pneumonia.

Dr. Wilson: Mr. Bowden?

Student Bowden: I believe that a pansinusitis was the original condition here, but that the intracranial complication was a localized meningitis. Death was probably due to pyemia, with multiple embolic abscesses in the lungs, the emboli arising in a thrombosed cavernous sinus.

Student Robertson: I believe that the mode of extension into the cranial vault was either by direct erosion of the walls of the frontal sinus, or else by extension along the ophthalmic vessels to the cavernous sinus. The intracranial lesion is probably either a brain abscess or a localized meningitis. The infecting organism was probably a hemolytic streptococcus, because of the rapidly developing anemia in spite of repeated blood transfusions.

Dr. Wilson: Dr. Hope, will you discuss your case?

Dr. Hope: This man's complete history was really of two years duration, with repeated attacks of sinusitis. On this admission he had a pansinusitis, especially on the right side, and that is well illustrated by these x-rays. There was marked swelling about the eye and also a tender swelling of the right temporal bone. He was acutely ill and operation was not advised because of his generally poor condition and because it is generally thought that it is best not to open an acute fulminating sinus for fear of extending the infection. He was treated locally in an attempt to drain the sinuses through the nose, but with little success. Following each blood transfusion his general condition improved temporarily, but at no time was he in condition for even the most conservative operative procedure. The fluctuant swelling over the right frontal sinus was thought to be an osteomyelitis of the frontal bone following sinus infection. A brain abscess was thought to be the most likely complication to explain his cerebral symptoms; that is the usual intracranial complication of sinusitis. He appeared to be septic in spite of a negative blood culture.

Dr. Lynch: This is, as has been surmised, a brain abscess following sinus infection, but the termination was somewhat different from that given.

There was much swelling about the orbit at autopsy, with several osteomyelitic abscesses on the right side of the skull. The sheath of the right temporal muscle was distended with pus, and the muscle was necrotic. There was some swelling of the conjunctival tissues but no proptosis of the eye.

The right frontal lobe was extensively agglutinated to the dura by fibrinous exudation, there being a localized meningitis here and on the under surface of the left frontal lobe, with the rest of the meningeal surface uninvolved. In the tip of the right frontal lobe a foul suppurating cavity about 4 cm. in diameter was found, and you can see it here in this specimen. The cavernous sinus on the right was thrombosed with actual accumulation of pus in this vascular channel. The left cavernous sinus was open and clear. Beneath the cavernous sinus the whole sphenoidal and ethmoidal system of sinuses were filled with pus. The middle and internal ears were free of infection.

The terminal picture was one of pyemia, with an active transfer of the infection via the blood stream, in spite of the negative blood culture. There was an abscess in each lung, doubtless arising from infected emboli whipped off from the infected thrombi in the cavernous sinus. These abscesses had ruptured into the pleural cavity on each side, and about 500 cc. of foul, watery pus was accumulated in each pleural cavity.

The course of the infection to the fatal issue is fairly clear: sore throat, paranasal sinusitis, cavernous sinus thrombosis, brain abscess and pyemia. Perhaps Dr. Lassek can give us the

exact course of the infection from the sinuses.

Dr. Lassek: This probably took place via the numerous veins of the ethmoidal sinuses, which pass through the cribriform plates of the ethmoid bones and terminate in the cavernous sinuses.

Dr. Prioleau: It is well to note how early embolism develops following infections about the face and sinuses. I have seen a case of skin infection about the nose in which emboli to the lung were evident before the patient's condition had really seemed serious otherwise.

Student Lemkin: How do you explain the fall in the spinal fluid cell count?

Dr. Johnson: That probably represents a walling off of the inflammatory process.

Dr. Peery: The spinal fluid findings seem to me fairly charactertistic of brain abscess. In this case there was an osteomyelitis of the bony roof of the nasal sinuses, and a local meningeal irritation, with the outpouring of fibrin and inflammatory cells to cause the agglutination of the meninges to each other and to the bone. Walling off of the infection was probably complete enough to prevent the general contamination of the meningeal spaces, in the same way that a localized abscess can develop in the peritoneal cavity without general contamination of the peritoneum. As the adhesions about the meninges became firmer, the spinal fluid would no longer be cloudy. An actual purulent fluid with organisms is not to be expected in such a case of brain abscess until it ruptures into the general meningeal spaces.

NEWS ITEMS

The trustees of the Lilly Heard Anderson Lectureship in Pediatrics announce that Dr. Thomas M. Rivers will deliver the annual lecture at the Academy of Medicine, Atlanta, Ga., Thursday, Nov. 14, 1935. Dr. Rivers' subject will be "Virus Diseases of the Central Nervous System." The talk will include: Anterior Poliomyelitis, its treatment and prophylaxis; virus encephalitides; and the new virus meningitis that is attracting attention at the present time.

Dr. Rivers, a native Georgian, is in charge of this field of research at the Hospital of the Rockefeller Institute for Medical Research in New York City. He is a recognized authority in his line of endeavor, and should be warmly received in Atlanta both on account of his ability and his nativity.

The medical profession is cordially invited to attend.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"THE TREATMENT OF PERFORATED PEPTIC ULCERS"

The conditions associated with perforated peptic ulcers vary greatly and accordingly no set rules for their treatment can be promulgated. However an attempt should be made to evaluate the various factors and the underlying principles of treatment established. These will vary to some extent with different surgeons according to the types of cases encountered as well as their own skill in handling them. In an article in the Journal of the American Medical Association (104.7, Jan. 5, 1935), Dr. Hugh H. Trout of Roanoke, Virginia, reviews a series of 41 cases. He makes deductions principally from these and in addition a consideration of the literature.

While drainage after operation is generally looked upon as a safety measure, in this type of case it may be fraught with great danger, especially if improperly used. The author reports four cases seen in consultation in which drains were placed near the point of closure of the perforation. All were followed by gastric or duodenal fistulas, a lingering illness, and finally death. The question of whether or not to drain depends greatly upon the amount and type of soiling of the peritoneal cavity and the time elapsed since the perforation. The type is dependent upon the bacterial flora of the mouth and pharynx, the food intake and the stage of digestion. Of great importance is the inhibitory action of hydrochloric acid upon bacteria; in cases of peptic ulcer the acid content of the stomach is generally high. In these cases it seems best to reverse the usual rule, and when in doubt not to drain. When drains are used it is imperative to see that they are not near the site of perforation. Bringing them out through an adequate stab wound in the lumbar region is preferable to bringing them out through the incision.

Simple closure of the perforation as a rule is the safest procedure. Induration and other changes add greatly to the difficulty of excision of the ulcer with pyloroplasty. Pyloric obstruction at times necessitates gastro-jejunostomy however continuous gastric suction through a nasal tube has greatly reduced the indications for this. In less than 10 per cent of the author's cases in which only a simple closure was done has a subsequent operation for obstruction been necessary. Besides the increased danger attendant upon performing immediate gastro-enterostomy unless specifically indicated, further reason against its routine use is the danger of the formation of gastro-jejunal ulcer, which lately has been proven to be more common than heretofore thought.

In this series are reported three cases of acute perforation on the posterior wall, all associated with repeated massive haemorrhages. The details of how they were treated are not given, but all of them died. The author suggests that the best method to follow in this type of case is to do a partial gastric resection as advocated by Allen and Benedict. The author's experience has not supported the dictum that "bleeding ulcers don't perforate and perforating ulcers don't bleed."

The most important factors in obtaining a low mortality rate are early diagnosis and immediate operation. In this series the mortality rate is 22 per cent. This is somewhat lower than the average, which is attributed to the fact that these patients were referred for surgical treatment somewhat earlier after the perforation than is usually the case.

MEDICAL COLLEGE TO MARK FOUNDING

111th Anniversary Will Be Observed at Exercises Here on November 13

Dr. Riesman to Speak

Orator, Like First Faculty, From the University of Pennsylvania Faculty to Hold Clinics

The Trustees and Faculty of the Medical College of the State of South Carolina are looking forward to a large attendance of alumni and other physicians at the second annual celebration of Founders Day, to be held November 13th at the Roper Hospital and the Medical College, and at the Fort Sumter Hotel. The exercises are in commemoration of the first opening of the College 111 years ago.

The Founders Day Lecture will be delivered at the evening banquet, to be held at the Fort Sumter Hotel at 8 o'clock, by Dr. David Riesman, of Philadelphia.

Dr. Riesman holds the chair of Clinical Medicine at the University of Pennsylvania. He is a leader in medical education, in the practice of the specialty of internal medicine, and in medical history circles, and is a noted speaker at medical gatherings and writer in medical literature.

Dr. Riesman is well known by the medical profession of this state as well as at large. In addition to membership in various medical and scientific societies he is a past president of the Philadelphia Medical Society, the Philadelphia Pathological Society, the Northern Medical Association, the Medical History Society, and the Gastro-Enterological Society.

He was born in Stadt-Lengsfeld, Germany, but has spent his professional life in this country. After graduating from the University of Pennsylvania, in 1892, he held several teaching positions in its medical school and was for a number of years Professor of Clinical Medicine and physician to the Philadelphia General Hospital and the University Hospital. At the present he is Professor of the History of Medicine and Professor Emeritus of Clinical Medicine. To his numerous other publications he has added this year his book "The Story of Medicine in the Middle Ages."

In addition to Dr. Riesman's lecture in the evening there will be a day of special clinics at the Roper Hospital and Medical College, given by various members of the Faculty for the benefit of their guests of the day. It is expected that Dr. Riesman will give one of these clinics and will speak to the Medical History Club at a luncheon meeting.

PROGRAM

Roper Hospital Clinics

9-9:30 A.M.—Nephrosis, Dr. Wythe M. Rhett.

9:30-10 A.M.—Toxemias of Pregnancy, Dr. Lester A. Wilson.

10-10:30 A.M.—Common Foot Troubles, Dr. F. A. Hoshall.

10:30-11 A.M.—Pyuria and its Treatment, Dr. J. J. Ravenel.

11-11:30 A.M.—Infections of the Hand (illustrated), Dr. Wm. H. Prioleau.

11:30-12 M.—Medical Clinic, Dr. Robert Wilson.

4-5 P.M.—Medical Clinic, Dr. David Riesman, Philadelphia.

Fort Sumter Hotel

8 P.M. ---------- Banquet

Founders Day Lecture: "The Clinical Approach", Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania.

The Medical College is among the oldest medical schools in this country and has supplied many promising physicians to the nation and abroad as well as furnishing the majority of physicians to this State throughout its history. During recent years its graduates have composed about 75 per cent of South Carolina's doctors.

Among its graduates are numbered many of high standing in the several government services and in medical institutional and educational service.

The first faculty of the College was a famous one and immediately put the College to the forefront. Its position of leadership was disturbed by the War Between the States and the Col-

lege closed during the War. From its reopening, following the War, it has pursued an honorable course in service to the people of the State, and it was taken over and made a part of the university system of the State in 1913, ranking during its operation in this system as a medical school of the first grade.

At the present time the Faculty numbers about forty of professional rank and about thirty-five in the lower teaching grades. By virtue of the necessity of limiting the number of students practically all members of the classes are citizens of South Carolina, although a large number of outside applicants knock at its doors each year.

The Board of Trustees and Faculty issues a cordial invitation to the medical profession of the State and any others who may be interested to join in the annual Founders Day Celebration.

NEWS ITEMS

Greenville, S. C.,
October 14, 1935

To County Secretaries:

Dear Doctor:

On November 5 the South Carolina Society of Ophthalmology and Otolaryngology is having its annual meeting at the Columbia Hotel, Columbia, S. C., at 3:00 P. M. We are fortunate in having at this time Dr. T. L. Terry from the Massachusetts Eye and Ear Infirmary who will address us. There will also be two other short papers by local men. Following the scientific program we will have a dutch dinner at the Columbia Hotel. We will be delighted to have any members of your society who would like to come. Anyone who does come I feel sure will be well repaid as Dr. Terry is an exceptionally interesting and able speaker. If any of your members decide to come I would appreciate your letting me know so that accommodations may be reserved for them.

Fraternally yours,

J. W. Jervey, Jr., M.D.
Secretary S. C. Society of
Ophthalmology and Otolaryngology.

LAURENS COUNTY MEETING

At the recent meeting of the Laurens County Medical Society Dr. George R. Wilkinson, Greenville, delivered an address on the financial side of the practice of medicine. Dr. Wilkinson strongly urged better business methods in dealing with patients and more prompt efforts at collection of fees. The speaker was of the opinion that in many localities fees could be increased to the benefit of the doctor and patient. He also stressed the importance of greater discrimination in the designation of charity cases.

Dr. Edgar A. Hines of Seneca, Secretary-Editor of the South Carolina Medical Association addressed the Society on the functions of organized medicine in solving medical economics problems. Dr. Hines gave an outline of the activities of the American Medical Association as well as activities of the State Medical Society. Dr. Hines appealed for a one hundred per cent county society membership and a united front along all lines connected with the practice of medicine in its legitimate fields.

A liberal discussion followed the addresses of the invited guests, in which many of the members of the county society participated. The Laurens Society is one of the oldest county societies in the upper part of the State and it has had many distinguished physicians on its roll of membership. There was a good attendance and a delightful supper was enjoyed by the Society.

Dr. D. O. Rhame, Jr., Clinton, President.
Dr. Geo. R. Blalock, Clinton, Secretary.

E. A. H.

SOCIETY REPORTS

THIRD DISTRICT MEDICAL ASSOCIATION, OCTOBER 18, 1935

Program

1. Turkey Dinner, served by ladies.
2. Address of welcome—Dr. R. C. Grier, President of Erskine College, Due West, S. C.
3. The Principal Cause of Backache in the Latter Half of Life—Dr. George R. Wilkinson, Greenville, S. C.
4. The Treatment of Certain Endocrine Disturbances with Deep X-Ray Therapy—Dr. Will S. Judy, Greenville, S. C.
5. Dissection Showing Anatomy of G. U. Tract. Some remarks on Trans Urethral Section—Dr. H. M. Daniel, Anderson, S. C.
6. Unfinished Discussion of Mental Hygiene —Dr. B. O. Whitten, Clinton, S. C.
7. The Treatment of Nephritis—Dr. A. Ellis Poliakoff, Abbeville, S. C.
8. Election of Officers.
9. Adjournment.

Dr. J. R. Power, Abbeville, S. C., President.
Dr. F. L. Mabry, Abbeville, S. C., Secretary.

PROGRAM FOURTH DISTRICT MEDICAL ASSOCIATION, GAFFNEY, S. C., OCTOBER 15, 1935, 4:00 P. M.

Scientific Program

1. Infections of the Upper Respiratory Tract: Dr. John R. Harrison, Greer, S. C.
2. Pyuria in Children: Dr. Mordecai Nachman, Greenville, S. C.
3. A Brief Resume of Some Urological Conditions, Emphasizing Obstructions: Dr. W. B. Lyles, Spartanburg, S. C.
4. Diseases of the Oral Mucosa: Dr. J. Hughey Crooks, Greenville, S. C.
5. Some Physiological Factors in the Production of the Allergic State, or Why Asthma: Dr. Everett B. Poole, Greenville, S. C.
6. The Prevention of Contagious Diseases in Children: Dr. D. Lesesne Smith, Jr., Spartanburg, S. C.
7. Treatment of Eclampsia: Dr. R. M. Dacus, Jr., Greenville, S. C.
8. What the General Practitioner Should Know about Glaucoma: Dr. W. McNeill Carpenter, Greenville, S. C.

Dinner 7:15 P.M.—Hotel Carroll

Remarks: President-Elect of S. C. Medical Society, Dr. R. C. Bruce, Greenville, S. C.

Reading of Minutes.

Entertainment by Limestone College Students.

Election of Officers.

Reading Time of Papers 15 minutes.

Discussions 5 minutes.

Dr. A. P. McElroy, Union, S. C., President.
Dr. R. M. Pollitzer, Greenville, S. C., Vice-President.
Dr. G. R. Wilkinson, Greenville, S. C., Secretary.

SOUTH CAROLINA TUBERCULOSIS ASSOCIATION

Twenty-Ninth Annual Christmas Seal Sale

Columbia, S. C.
October 17, 1935.

To Directors S. C. Tuberculosis Association:
Dear Director:

Our Annual Meeting will be held on Friday, November 1st, this year. I hope that you can be here.

The meeting of the whole Association will begin at 12 o'clock and that of the Board of Directors will be held at 1 P.M. for the election of officers. Following the Director's Meeting, we shall have a Dutch Luncheon for Directors, Members, Christmas Seal Sale Chairmen and friends. All sessions will be at the Columbia Hotel.

Outstanding speakers on the program will be Dr. F. H. McLeod, our State Seal Sale Chairman, Dr. Philip P. Jacobs, Extension

Director of the National Tuberculosis Association, and Miss Jean Latimer, Health Education Consultant, Boston, Mass. You know Dr. McLeod and Dr. Jacobs. We shall be glad to introduce Miss Latimer, who is a native of Greenville, but better known throughout the country as Health Education Director of the Massachusetts Tuberculosis Association.

We are trying to get a demonstration showing of the new sound film "Contacts" produced for the Tuberculosis Association in Minneapolis, but cannot announce success as yet.

A program will be sent to you in about a week. This letter is to give you more time to plan to be with us.

Will you let us know if you expect to be here and if we may reserve a plate (75c) for you at the Luncheon?

Sincerely yours,
Mrs. D. McL. McDonald,
Executive Secretary.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

October 1st, 1935.

Dr. E. A. Hines, Sec'y-Treas.,
South Carolina State Medical Society,
Seneca, South Carolina.

Dear Doctor:

The Cancer Committee reports of ten southern State Medical Societies are enclosed for your perusal. I believe you will find them as interesting and helpful as they have been to us. Although many Chairmen have overlooked details relative to the number of meetings, the character of their audiences and the number of individuals in attendance, this office has been able, through correspondence and through checking of material ordered for meetings, to secure certain figures which represent the minimum number of meetings, etc.

A survey of this data shows that from the total number (835) county medical societies in thirteen states, 416 known medical societies held cancer meetings in 1935. In this area there have been 207 radio talks given and newspaper articles have been published in twelve states. In addition, nurses' study courses on cancer have been carried on in 395 hospitals.

The cancer control work during the past three years has been confined for the most part to presentation of facts relative to cancer of the breast and uterus to the medical profession. Many Cancer Control Committees have come to believe that these two subjects should be repeated because they represent sites where diagnosis, prognosis and the outcome of early adequate treatment promise the best education from the results produced both for the lay and medical groups. In order to bring about a coordination of results it has been suggested that lay education be intensified and carried along simultaneously with the cancer symposia for the medical group. Since the 2,500,000 women belonging to the General Federation of Women's Clubs in the United States are supporting a program of education within their groups on the subject of cancer of the breast and uterus, these groups within your district will be looking to your Committee for advice and guidance. As individuals they will be seeking examinations from general practitioners who are the key men in cancer control. The American Society for the Control of Cancer, in order to contribute its share, will furnish you with three film strips together with such literature as may be needed.

The film strips are as follows:

1. New film strip on tumors of the breast (medical).

2. Film strip for popular audiences entitled "Fight Cancer With Knowledge."

3. Film strip (semi-technical) for use with audiences such as college students, dinner clubs, etc., entitled "Cancer: Its Life History and Practical Measures for Its Control."

A complete talk will be available.

Your attention is called to the fact that a film strip projector and films are in the hands of the Chairman of each State Cancer Control Committee for the use of the Committee. In addition a permanent loan collection of: an eight-minute Canti film together with slides and film strips will be found in your State.

Each member of the Cancer Committee of all State Medical Societies has been furnished with a list of the material available within each state.

Please note that literature for lay groups will be placed with all State and County Health Departments in your territory, whenever you ex-

press that wish.

This Society can also furnish you with a modest set of posters and charts for lay education. Medical exhibits for state societies are available on request.

I beg permission to note that some State Cancer Control Committees have been able to accomplish much with a minimum of individual effort by securing:

1. A more or less permanent committee with rotating membership, i.e., only one member retiring each year.

2. The aid and cooperation of each councillor who stimulates each County Society in his district to have a cancer symposium each year and to appoint a local cancer committee to advise and assist the health officer and the women's clubs.

3. A division of labor within the State Committee to make one member responsible for each of the following activities:

   a. Newspaper releases
   b. Lay education meetings (women's clubs)
   c. Radio broadcasts
   d. Medical society symposium
   e. Stimulation of individuals and special groups for diagnosis and treatment
   f. Ambulatory cancer institutes or clinics for post-graduate work.

4. By starting committee activity on Cancer Control in October.

I am taking this opportunity to thank you for your past interest and trust that you will make your future wishes known to me.

Very sincerely,
J. W. Cox, M.D.
Southern Field Representative.

Report on South Carolina

Report of the State Cancer Committee:

Last year the House of Delegates passed the motion of Doctor Kenneth M. Lynch to the effect that the President appoint a State Cancer Committee adopting the five year cancer program of the American Society for the Control of Cancer. The Committee appointed consisted of Doctor J. A. Allison, Chairman, Doctors F. H. McLeod, W. M. Sheridan, Hugh Smith, Kenneth M. Lynch and T. R. W. Wilson.

The committee met in Columbia, S. C., December 21, 1934, only one member absent.

Maybe they are *your* patients

THEY'RE a healthy, happy young couple—proud in the possession of their first baby.

Though they are average people in average circumstances, they are as sure as anyone reasonably can be that their little one will develop normally — grow tall, straight and strong — have firm, sound teeth and bones.

For there was no deficiency in the mother's diet during pregnancy or lactation. There will be no deficiency in the *child's* diet as she grows older. Their doctor advised them, and faithfully they followed his advice. Now — because their child is well-formed, well-developed, sturdy — they have the utmost faith and confidence in their doctor and *will continue to follow his suggestions.*

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Doctor S. E. Harmon, President elect, Doctor E. A. Hines, Editor of the State Journal and Doctor J. W. Cox, field representative of the Society for the Control of Cancer were present. Doctor Cox outlined briefly the work done in other states and recommended a program for South Carolina. Dr. E. A. Hines made a motion that the January issue of the South Carolina Journal be made a cancer number and that the Chairman of the Cancer Committee write a brief summary of the work of the American Society for the Control of Cancer explaining what it will furnish to the South Carolina Cancer Committee. This article was printed in the January Journal of the South Carolina Medical Association.

Respectfully submitted,
J. Richard Allison,
Chairman of the State Cancer Committee.

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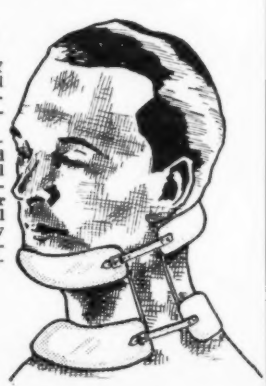

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SUBPHRENIC ABSCESS

By

G. T. TYLER, JR., M.D.
Greenville, S. C.

Subphrenic abscess is one of the most serious of abdominal complications. Fortunately it is not frequent; but it is also not rare. The prognosis is grave, and the mortality high—82 per cent to 100 per cent in unoperated cases: 20 per cent to 50 per cent in operated cases, according to the duration of the infection and the condition of the patient. Since 88 per cent of over 3,000 cases collected by Ochsner and Graves follow a primary abdominal process, the early diagnosis and adequate treatment before pus is formed, and if it is found, ample drainage with intensive—including postural—treatment after operation, is mandatory.

Only about 30 per cent of subphrenic infections suppurate. The remaining 70 per cent resolve spontaneously. Lee in 1915 reported 4 cases where accumulations were found beneath the diaphragm. These resolved, although operation had been planned in some of them. It occurs more frequently in males (74 per cent of cases). The reason is often an anatomical one, for drainage from the iliac fossa into the pelvis is more difficult in the male than in the female. The primary infections are, appendicitis, ruptured gastric or duodenal ulcer, diseases of the gall bladder and bile passages, pelvic infections, abscess of the liver, spleen, kidney, bladder conditions, furunculosis, trauma, osteomyelitis, infected burns, and influenza. It also follows operations in a clean field. The organisms producing it are colon bacillus, streptococcus, staphylococcus, pneumococcus, etc.

Pleural involvement secondary to subphrenic infection is frequent—75 per cent in Beye's cases. He reports 190 cases of empyema with only one subphrenic infection. This he thought followed injury to the diaphragm when the empyema was operated upon. In 24 subphrenic infections, there were 9 in which the abscess had ruptured into the pleura. This means that lymphatic drainage through the diaphragm is from below upward. These abscesses had existed for weeks, even months, before recognition.

The anatomical divisions of the area beneath the diaphragm are six—3 on each side of the falciform ligament. They are the anterior, the posterior, and the extraperitoneal. The extraperitoneal spaces are bound by reflections of the peritoneum, which, extending to right and left, are called the right and left coronary ligaments. On the left side, the posterior pocket is the lesser peritoneal cavity. Although on the right side, it is surprising how frequently suppurative appendicitis is followed by left-sided subphrenic abscess.

The diaphragm, a musculo-aponeurotic sheet, arises from the entire costal border, the xiphoid, the vertebral column, and the 12th rib. These muscle sheets combine into a central tendon extending across the mid-line on each side. Motor innervation is by the phrenics: sensory innervation is by the 6 lower intercostals, the sympathetics, and a few fibres in the phrenic nerves. Hoover in 1913 contributed an excellent paper on the function of the diaphragm . He observed its movements on experimental animals, and on patients in his wards in health and disease —with special reference to pericardial effus-

Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

ions, emphysema, pleural and sub-phrenic accumulations. In quiet breathing, the scaleni and the intercostals elevate the ribs and widen the costal angle. The diaphragm in contracting narrows the costal angle. In subphrenic accumulations, the diaphragm is pushed up, and is at a mechanical disadvantage. Hence in deep inspiration, the costal angle is either not changed or is widened. He concludes: "Movements of the costal border during respiration give valuable aid in differentiating between supra- and sub-phrenic disease; also between pulmonary consolidation and pleurisy with effusion." Barclay X-rayed patients during inspiration and expiration, while standing, lying down, and hanging by the feet. The position of the diaphragm was changed little when the subject assumed the different postures.

Infection to the subphrenic area travels by direct extension, by the lymphatics, and by the blood stream. The extraperitoneal area is said to be most frequently invaded by way of the vessels in the falciform ligament. Location of the abscess is, right posterior in 60 per cent; left anterior in 20 per cent; retroperitoneal in 15 per cent of the cases.

The clinical history is most important, and cannot be overstressed. The onset may be insidious or sudden. Usually the course of events is about as follows: after operation or a severe abdominal attack without operation, the patient may do well for some days or weeks. Then occurs a rise of temperature, a chill or chilly sensations, followed by pain, sweating, hiccough, maybe nausea, non-productive cough. The patient appears sick and in a few days begins to lose ground. He may have a healed wound, and have left the hospital. These symptoms may continue for weeks or months. The leucocytes are increased; anemia results, with prostration. There may be pain along the costal border, in the flank, in the shoulder, or the neck. Every symptom may point to a pleural involvement. In fact many cases have been mistaken for fluid in the chest or empyema. On physical examination the interspaces may be widened, and the chest wall may bulge. The flare of the costal border on the affected side may be increased, and tenderness may be present over the tip of the 12th rib, and between the lower ribs in the back, with fullness. In late cases edema may be present. These signs depend largely on the location of the abscess. Litten's sign is usually absent; Grocco's sign present. One writer has used a sharp stroke on the costal border with 3 figures, as in percussion. On the rebound of the ribs, pain is felt. Liver dulness is increased. If gas is present (it occurs in 1-3 of the cases), there is a tympanitic note between the area of lung resonance and the liver dulness. Succussion has been demonstrated on shaking the patient, and on the left side by the heart beat. If the abscess is posterior, there is said to be a triangular layer of increased dulness in the mid-axillary region. In empyema the diaphragm is often pushed down, and the costal margin retracted. The heart is frequently displaced, but not in subphrenic abscess. Hoover has shown that movements of the costal margins can be demonstrated best by placing the thumbs on them, with the hands over the lower ribs. Only in this way can the movements be appreciated, and one side compared with the other. Often there is tenderness and rigidity of the upper abdominal muscles on the affected side. Jaundice nearly always means that a liver abscess has ruptured into the subphrenic pocket.

Whatever observations are made at the bedside must be supplemented by X-ray pictures and by the fluoroscope. Unless the diagnosis is certain, these examinations should be repeated, for the signs and symptoms change with fair rapidity. The fixed high-lying diaphragm, with the costophrenic angle acute, is very suggestive, especially if the outline is smooth. If it is irregular, pleural adhesions or malignancy of the liver may cause it. Air beneath the diaphragm with or without a fluid level, is diagnostic. X-ray examinations should be made in more than one position, vertical, supine, lateral. We must not expect too much from the Roentgenologist unless we have him in frequent consultation. Too often we demand that he take a single film and from that give us the diagnosis. In most cases this cannot be done. Pneumoperitoneum has been advocated by some authors and condemned by others. It should not be used unless the patient is in fairly good condi-

tion. Many times he is desperately ill, and must be handled as gently as possible. The diagnostic needle also has its advocates and opponents. If used properly—a moderate sized needle, and the patient on the operating table ready for a two-stage operation if pus is found—I can see little harm from its use. One patient, a physician, had 23 negative punctures. On the 24th, pus was found.

Operative approach to the abscess is by transpleural, trans-abdominal, and extra-peritoneal route. Nather and Ochsner urge the extraperitoneal. Ochsner attributes the low mortality in his personal cases (10 per cent) to this procedure. The location of the abscess determines largely the method of approach. The details of operation cannot be taken up in the limited time for this paper, which is largely devoted to diagnosis.

The items I wish to stress are a careful clinical history with thorough and repeated physical and X-ray examinations. One writer has aptly said: In every abdominal case that is not doing well, think of subphrenic abscess.

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DISCUSSION

Dr. Floyd D. Rodgers, Columbia, S. C.:

Dr. Tyler has shown you cases of suspected subphrenic abscess or subphrenic accumulations. These cases, on closer study, were proven not to be subphrenic abscesses. In my discussion. I am going to reverse the order of things and show you some subphrenic accumulations that came to autopsy. Although they had been diagnosed early, the procedure that followed did not cure the patients.

You notice that in Dr. Tyler's patient No. 1 there were no changes in the base of the right lung, although you saw a well demarkated high diaphragm, but it is significant that there are no changes in the lung fields. However, in the X-ray plates of the following cases, I want to call your attention to the fact that each of these proven subphrenic or liver abscesses had a transudate in the base of the right lung. Dr. Tyler and I had some little discussion as to the nature of these changes in the lung fields. It is a resulting inflammatory condition in the base of the lung following pyogenic infections immediately below the diaphragm. The autopsy report on this case was abscess of the liver with extension through the diaphragm; the base of the lung eroded with extension into the bronchus. When this patient was seen, he was moribund, but the important inflammatory area above the diaphragm was present. The man died almost immediately and had a most massive abscess of the liver. I never saw anything to equal it, and, of course, nothing was effectual in his case.

On this next case, I have a large series of plates, the one that you see now being the first. You readily see that there is a transudate in the base of the right lung, with the accompanying high diaphragm. We went a little further in this case after we got a slight increase in the transudate, and made lateral plates. You will note that in the lateral plates, the left diaphragm goes back, making a normal curve and the right diaphragm extends backward and is high posteriorly. So we felt that his abscess was posteriorly placed. The next plate is one made with the Bucky diaphragm to see if we could locate a softened area in the liver which we did not see.

From this series of plates, you can see that it has been our experience that in a true subphrenic abscess there is usually a transudate in the base of the lung above. We believe that this is an important diagnostic point.

Dr. W. R. Dancy, 702 W. Jones St., Savannah, Ga.:

I rise to call your attention to amebic abscesses, in this connection. I do not think they have been mentioned yet, and in this connection I wish to cite one case which came under my observation at Johns Hopkins. I mention Johns Hopkins because there was a splendid group of diagnosticians there trying to diagnose this particular case. The man was anemic and was evidently quite ill. He had lost weight. His stools were examined and were absolutely nega-

tive for the ameba. The kidneys were negative. On examination of the chest, the physical signs were impaired over the right base. X-rays were taken, and a spherical mass was found in the right lower lobe of the lung. The liver was definitely not enlarged and not sensitive. The temperature was low —not absolutely normal, but not running above 100. That led us to the belief that possibly we had a cystic mass in that right lung. The blood count gave us nothing of importance, because there was no elevation of the leukocyte count. It was decided, in order to prove the diagnosis and in order to relieve the patient, who was steadily going to the bad, that an operation should be performed and this cyst, if it were a cyst, drained. The patient was prepared for operation the following morning and placed on the table. While taking the anesthetic he had a severe attack of coughing and a great mass of pus came from his mouth—from his lungs, of course. This was examined, and in it were found numerous amebae. The operation on the lung was done and the abscess opened and drained. Later another operation was done on the liver and the remnants of the abscess were found in the liver, and this was drained. It seems that the patient had a liver abscess due to the ameba; it was originally subdiaphragmatic, and the infection passed along the course of the lymphatics into the lung. There was no empyema; there was nothing about the lung; there was no elevation of the diaphragm on that side; and it made a very interesting case. The patient recovered.

The point I wish to emphasize is that we can have an abscess of the lung from a subdiaphragmatic infection without empyema, and we can have it due to the ameba coli without any infection by the usual organisms.

Dr. Tyler, closing the discussion:

I am glad to have had this discussion.

With regard to Dr. Dancy's remarks, I purposely omitted amebic abscess of the liver from my paper. Of course, the liver abscess does become subphrenic when it ruptures through the capsule of the liver and causes all these symptoms.

If I can keep you impressed with the possibility of subphrenic abscess, I think you will find it more frequently. The diagnosis is difficult.

PENTOBARBITAL SODIUM AS AN OBSTETRICAL ANALGESIC

By

JACK D. PARKER, M.D.
Greenville, S. C.

The expectant mother of today rightfully demands a far more painless labor than that experienced by her mother and grandmothers. Fortunately the profession now has access to various drugs and their combinations, which, in the majority of instances, very satisfactorily meets these demands. And still more fortunately, they are met by use of agents proven to be without deleterious effects either upon the mother or baby, without interference with the contractility of the uterine musculature, and with agents simply administered.

Read before the Fourth District Medical Association, Union, S. C., 1934.

Following the report of Irving et al in the January 1934 issue of Surgery, Gynecology, and Obstetrics, using 860 cases at the Boston Lying-In and the report of Averett of Philadelphia in the January 1934 issue of the American Journal of Obstetrics and Gynecology, we began the use of Pentobarbital sodium or Nembutal on the service and some private cases at the Greenville General Hospital.

Various barbituric acid derivatives have acquired a rather prominent place of late in the production of Obstetrical amnesia and analgesia, both alone and in combination with other drugs, mainly morphine derivatives and Scopolamine. Some have been hesitant about the use of the barbiturates due to the undetermined toxicity of the drug. They are rapidly absorbed and rather slowly eliminated by the liver and kidneys, and the degree of toxicity is apparently in inverse proportion to the rate of elimination. According to Averett, this does not hold true in the case of pentobarbital sodium, which is excreted much more rapidly than sodium amytal or Pernocton, and hence, of less toxicity. I am able to gather reports of its use in 287 obstetrical cases, and in what appears to be large dosage, and not one of them has exhibited any toxic symptoms, this considering pulse, blood pressure, respirations and urinalyses.

We have a series of 27 cases, 19 being white, and 8 being colored patients. All of the cases were primipara except one. The particular brand of pentobarbital sodium used was that of the trade name Nembutal, which was furnished gratis by the Abbott Laboratories. We began with the administration of 4 1-2 grains (3 capsules by mouth) when definite uterine contractions commenced or when the patient began to complain of pain. In 9 of the 27 cases it was necessary to give additional nembutal, either due to unusual restlessness, prolonged

labor, or continued complaint of pain. Nine grains was the greatest amount given, and this to one patient who had very weak irregular uterine contractions over a period of forty two hours. It is interesting to note that even over such a prolonged period this patient remembered nothing of her labor, the baby was delivered and cried spontaneously, and her puerperium was uneventful. The average amount given was 5.6 grains. In addition to the Nembutal, 9 of the 27 cases received Scopolamine in gr. 1-100 or gr. 1-150 dosages. Two additional private cases of two other members of the staff received 1-3 gr. of Pantopon.

To me the most important fact to be learned from this series, other than the appearance of any deleterious effect on the mother or baby, is the amount of amnesia experienced. Feeling that with the proper dosages and correct combination of Scopolamine, we can expect at least 9 out of 10 patients to remember none of the unpleasantness of labor, we plan to continue variations as to time and the amount of the drug administered. The per cent amnesia is this series of cases was estimated entirely from the statements of the patients themselves, and it has been a source of great satisfaction to hear these women say that they remembered taking the capsules and nothing else, awaking several hours after delivery to be informed that the baby had arrived. 18 out of our 27 cases, or 66 per cent remembered absolutely nothing about the labor—6 additional cases stated they remembered some such major incident as being transferred to the delivery room, being placed in position on the Gellhorn delivery table, or the placing of the mask over the face for nitrous oxide and oxygen during the actual delivery, but did not remember any of the pain or fatigue of labor. This seems sufficient to warrant a classification of complete amnesia for 24 of the 27 cases. 2 cases were classified as obtaining about 75 per cent amnesia, inasmuch as they stated that they recalled having some pain though not severe. One case is reported as a complete failure due to the late administration of the Nembutal, labor having progressed well into the second stage and this patient delivered within an hour after admission.

Following the discussion of the favorable feature of the drug, namely, amnesia, is that of the most unfavorable, restlessness and irrationalty. This requires some person in constant attendance, preferably a nurse, but when this was not feasible in some of the service cases we allowed some of the family to stay by the bed to prevent the patient falling out or getting up from bed. These cases were very easily restrained and were not of the unruly type requiring force. The degree of restlessness has been divided into three divisions, none, moderate, and marked. 6 of the 27 cases exhibited no restlessness at all; 2 additional cases moderately restless responded beautifully to the administration of 1-3 gr. pantopon, quieting and cooperating well until delivery was terminated. 13 cases were moderately or slightly restless, requiring close observation, but otherwise not objectionable. 6 of the 27 cases exhibited marked restlessness, requiring some restraint, and 2 of them got out of bed before we instituted constant watching after giving the Nembutal. Neither of the 2 patients remembered anything at all about the particular incident or the labor. This is too high a per cent of marked restlessness, but I feel that the fault was in not repeating an additional 1 1-2 or 3 grains of Nembutal, and in not giving more Scopolamine earlier in the course of labor. Irving and his associates at Boston Lyin-In state that a supplementary instillation of rectal ether is used to control marked restlessness in the cases at that institution where Pentobarbital and Scopolamine has been adopted as the standard method. Others have suggested the rectal instillation of Paraldehyde in olive oil, but as yet we have not used it.

Type of delivery: 17 of the 27 cases, all primipara except one delivered spontaneously. 10 of the cases were delivered by application of low forceps, which consisted mainly in lifting the head over the perineum. 2 of the 10 low forcep cases however were posterior positions. There were no other abnormal positions or conditions requiring other operative interference in the 27 cases, except the performance of 8 episiotomies.

Effect on babies: All of the 27 babies cried immediately upon delivery, but after the initial

cry 3 of them required slight resuscitation or removal of mucus from trachea. It is interesting to note that 2 of these 3 babies were the 2 that received 1-3 gr. pantopon.

Puerperium: There were no cases of post partum hemorrhage. All the mothers slept soundly for several hours after the delivery. The majority of the cases had been given nitrous oxide and oxygen for the actual delivery, altho several received only a whiff of ether or chloroform. 3 cases showed a slight temporary elevation of temperature, one due to a mastitis and two due apparently to a putrid endometritis. No evidence of any definite puerperal infection occurred in any of the 27 cases. The average length of labor in this group was 15 hours—this counted from the time the patient stated she first began having pains, and not from the time of the administration of the drug, so that no retardation of the progress of labor was noted in this series.

In conclusion, the only three disadvantages to the method described are: restlessness in some cases, use of low forceps required in a larger number, and it is not adaptable for use in the home. The first objection, as previously stated, can be overcome by use of larger dosages of Nembutal, by use of more frequent doses of Scopolamine, or the supplemental use of rectal ether. The second disadvantage I do not regard as of any consequence. The third is a very definite one, but I feel that the sooner we get away from home obstetrics, where possible, the better off we will be. Against these disadvantages, we have a method that will assure our patients a practically painless labor without any harm or danger—a method that does not retard labor—and one that has no ill effect upon the baby.

I wish to express my appreciation to Dr. Robert Dacus, Resident at Greenville General Hospital, for his aid in compilation of these statistics.

Note: Since this series was reported, we have about twenty-five additional cases and the results are the same. Scopolamine is used uniformly now.

A DISCUSSION OF SOME OF THE FUNDAMENTAL PRINCIPLES IN CARING FOR A PATIENT WITH AN ACUTE ABDOMEN

By
S. E. HARMON, M.D.
Columbia, S. C.

I have thought, studied and talked economics in connection with efficient scientific medicine so much and so long that I thought it wise to digress and discuss another very important scientific subject in medicine.

The first essential in caring for any one with an acute abdomen is rest in every way. Rest is especially paramount in this condition. Usually, the first symptom is pain, which is nature's signal that something has gone wrong, something out of the ordinary is taking place. Pain is a signal to the individual and to the physician, warning them so that they may look for and find the cause. One cannot very well correct or handle trouble until they know the cause; therefore, the physician should immediately set to work to find the cause. Usually pain followed by nausea and vomiting, depending of course, on the cause and severity. Constipation or diarrhea or dysentery either may be present in a percentage of cases. There are no set classical symptoms in all cases, or set of symptoms in any case.

Cool, sound, sane mature judgment is necessary in the study of these cases because there are many possibilities. While a study is being made, the patient should be placed in a comfortable bed at rest in every way with no drugs at all if practical to prevent. Certainly no laxatives or purgatives should be given under any circumstances. If absolutely necessary, and in some cases it is imperative, to give an opiate to relieve pain, it should be given hypodermically, very guardedly, so as not to mask the symptoms and give all concerned a false sense of security. The symptoms that nature is so obviously presenting should not be masked until the cause is found. Absolutely nothing should be given by mouth except small amounts of water and only in selected cases to quench thirst.

The abdominal organs cannot be placed at rest by putting work upon the stomach. Therefore, the stomach should be kept absolutely

empty while a study of the case is being made. To assist in relieving pain and discomfort in an acute abdomen, one may use diffused heat over the abdomen, dry or moist, though I prefer moist. Prolonged diffused heat quiets muscular contraction with relaxation. It soothes the nervous system and causes the patient to become very much more comfortable. Also causes an increase in leucocytes which is nature's bulwark of defense against infection. Also small, low, easy enemas of saline or soapsuds to relieve the lower bowel—say one quart in an adult, and in proportion in children—will do no harm and often produce a great deal of comfort until the cause is arrived at.

In selected cases, gastric lavage gives excellent results by placing the stomach and intestines at rest, and not infrequently is life saving.

By following these simple fundamental principles with these patients, their organs and tissues will be protected and the morbidity and mortality rate materially lowered. Of course, in studying patients with an acute abdomen, we must realize that there are two fundamental types—potential surgical and non-surgical—which require rare judgment and scientific study, which includes an easy physical examination with a blood, urine and often feces examination, microscopically. After all this has been carried out, in exceptional cases the physician is compelled to rely solely upon his five senses, and occasionally the sixth sense must be brought in to service in order to care for these patients intelligently and successfully.

Usually with a careful study, a correct diagnosis can be arrived at in a reasonable length of time. Time is not always the greatest asset in these cases. Occasionally we can only determine whether they are surgical or non-surgical, and act accordingly.

SUMMARY

Absolute rest in every way. No drugs except an opiate to relieve pain when absolutely essential, and then very guardedly until a careful study has been had, and a conservative line of procedure has been mapped out with a potential correct diagnosis made.

ARTIFICIAL PNEUMOTHORAX

By

GRADY S. CLINKSCALES, M.D.
Anderson, S. C.

The condition of Pneumothorax, air in the pleural space, has been recognized for a long time. At first only as a complication or sequel to some pathological process and as result of traumatic injuries.

Artificial pneumothorax as a therapeutic agent was first used by Forlanine in 1894. The frequency in the use of this therapeutic measure in the treatment of pulmonary tuberculosis varied, as all new methods of treatment and agents vary in their inception, until their worth or worthlessness is established. Some users were getting what they thought were favorable results while others experienced the reverse. There were, and for that matter are still, many factors that enter into the prognosis of pulmonary tuberculosis, so that the benefit of collapse therapy was difficult to evaluate. During the course of time many obstacles have been surmounted, much research work done and many studies carried out. The increased sanatoria treatment along with the free use of the X-ray and fluoroscope have been of inestimable value in reaching some definite conclusion as to the collapse therapy. This form of therapy must be measured by the results and the results surely have been gratifying for during the past few years it has increased in use from about 15 per cent in 1932 to 40 per cent in 1933 and now to about 70 per cent in adult sanatoria patients.

Artificial pneumothorax per se is a mechanical process but at the same time alters greatly the physiology of the circulatory and respiratory systems. The types of collapse may be considered as complete, where the entire pleural space may be filled causing a uniform compression of the lung tissue toward the hilum; then a partial collapse where the above degree of compression is not obtained and the obstacles most often encountered are pleural adhesions which may vary in number and extent even to such a degree that the pleural space is obliterated.

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*Read before the Anderson County Medical Society, Anderson, S. C., October 9, 1935.

If air is injected into a normal pleural space, there will be a uniform pressure on the lung which will collapse to a degree, dependable on the amount used. As the air or gas is gradually absorbed, the compressed lung will re-expand uniformally and in proportion to the rate of absorption. The reason for this is the uniform compressibility and elasticity of the normal lung tissue. Now, where there is a diseased portion of the lung, this compression is not so uniform and there is a functional change with a lessening of the physical properties of compression and elasticity. As a result these diseased areas will not compress nor re-expand as freely and as completely as the healthy adjacent tissues. With the initial pneumothorax, it is the healthy lung that compresses while the diseased part gives very slowly. It requires repeated inflations to finally force in that part that is diseased. Likewise, that same area will re-expand poorly due to loss of elasticity and to a tendency to rapid fibrosis of the inflamed tissue following so much surface approximation. The healthy lung tissue has a tendency to envelope the diseased portion, driving it in. In the course of time, because of the decreased and progressively decreasing elasticity and especially the increase tendency to fibrosis in the affected lung tissue under gradual compression, the involved part will re-expand less and less. At the same time, the healthy lung tissue, the recoil of which remains practically unimpaired while under compression, will re-expand as rapidly as the fall in intra pleural pressure will allow, following the absorption of air. It follows that after a shorter or longer period of compression, the injected air will accumulate about the involved portion of the lung as if selectively compressing it, which is spoken of as selective collapse, and in the course of time there is a drying out with a permanent impaired functional area.

Compression of the lung causes the evacuation of and prevents the accumulation of the fluid excretions thus giving relief to the usual harrassing cough and expectoration. A positive sputum is often and quickly rendered negative. Other happy results to be expected are favorable influence on temperature and general feeling. The caseous areas are made drier. The infected areas are reduced in size thus bringing about a condition that favors fibrosis and atelectasis of the lung from the relaxation and surface approximation. These changes cause lymphatic stasis, thus limiting absorption of the toxic products. This reduction in absorption frees to that extent the nervous system and the other organs of the body from chronic poisoning which is responsible for the constitutional symptoms.

The indications for instituting collapse therapy are now of a much wider distribution. Formerly, it was used as a last resort. I believe that the favorable results are due to an early beginning of this form of treatment. It is particularly indicated in the very acute unilateral cases; cases of moderately advanced, active lesion in one lung with no pathology or an inactive process in the opposite lung, one that has not responded to the usual rest treatment; again those cases where there is cavity formation even in the presence of activity in the contralateral lung. It has been shown that the activity in the opposite lung from the side being compressed with the cavity, is not only not increased, but is lessened. In cases where there is reported hemoptysis or a pulmonary hemorrhage, compression has the most desired effect.

The type of cases that would not demand the collapse therapy are those of advanced lesions, particularly bilateral ones; the child, not before the teen age; tubercular enteritis. In cases of cardiac lesions that would be liable to further embarrassment of the heart; very early minimal cases that do not show in a short time evidences of improvement symptomatically and a clearing of the diseased process from the X-ray standpoint and cases that prove to have extensive pleural adhesions.

There were many reports of a statistical nature made at the last National Tuberculosis Association Meeting showing the result of collapse therapy. I take the liberty to present Dr. Alexander's report of 823 consecutive cases that were discharged from their institution at Ann Arbor, Michigan: Collapse therapy had been used in 72 per cent of these cases. At the time of discharge 47 per cent were arrested or apparently arrested, 14 per cent quiescent, 6 per

cent improved, 15 per cent unimproved or worse and 17 per cent were dead. Comparing these figures with those compiled by the National Tuberculosis Association in 1931 on 42,000 patients discharged from many sanatoria and on whom only about 10 per cent received collapse therapy were these results; 17 per cent were arrested or apparently arrested, 41 per cent quiescent or improved, 19 per cent unimproved or worse, and 23 per cent were dead. The percentage in the arrested and apparently arrested cases in whom extensive collapse therapy was used, is more than 2.5 times those cases who received little collapse therapy. The difference is greater yet when you consider that in the former group there were 11 per cent minimal cases and 57 per cent who had far advanced tuberculosis on admission, whereas the corresponding figures in the other group were 15 per cent minimal and 49 per cent for the advanced cases.

If we accept as a correct measure that a tubercular joint should be splinted and immobilized, there is no reason why similar measures should not be used in a case of open tuberculosis. It is not claimed that collapse therapy is to assume the entire role of treatment. It is but an additional measure along with the indispensable aids of rest, plenty of nourishing foods, fresh air, good hygenic environments, and an encouraging and happy atmosphere.

SOCIETY REPORTS

RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met Monday, October the twenty-first at seven-thirty o'clock, P. M., Batesburg, S. C.

We had a good attendance with two visitors, Dr. D. S. Asbill and Dr. B. Rubinowitz of Columbia.

Resolutions of appreciation of Dr. E. C. Ridgell and regret at his death were presented by Dr. E. P. Taylor and Dr. A. L. Ballenger and were unanimously adopted.

Dr. O. P. Wise reported a case of screw-worm infection in the face of a man who was afflicted with cancer.

This report elicited much discussion and from various angles and reports were made by Drs. Asbill, Ballenger and others of screw-worm infections in animals.

This meeting would have been worth while if nothing else had transpired but we also had a very interesting instructive and practical address on etiology of diseases of the rectum by Dr. B. Rubinwitz. His address was enjoyed and highly commended.

Supper was served in the Batesburg Hotel where good fellowship reigned.

Reverened Maxie Collins, who recently located here was our guest for supper.

Dr. S. O. Pruitt of Pennsylvania visited his family here last week-end.

The Ladies Auxiliary was entertained in the home of Mrs. W. P. Timmerman and had an interesting and well attended meeting.

Mrs. C. E. Owens, President of the State Auxiliary, and Mrs. B. Kendall of Columbia were visitors.

Mrs. Owens made an excellent address which was highly appreciated and enjoyed.

Drs. Wise and Waters were appointed program committee for next meeting.

W. P. Timmerman, M.D., Secretary.

CHICKEN SUPPER FOR THE DOCTORS

Batesburg, S. C.

The Ridge Medical Association and the Ridge Medical Auxiliary were entertained in the home of Dr. and Mrs. E. C. Ridgell, August 19, 1935. At this time the ladies of the Auxiliary served the members of the Association with a delicious chicken supper. Dr. Wm. Weston of Columbia was the guest speaker—he gave a very timely and interesting address. Miss Florence Hartley rendered two beautiful piano solos.

THE JOURNAL
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South Carolina Medical Association

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NOVEMBER, 1935

DR. J. I. WARING ELECTED ASSISTANT EDITOR OF THE JOURNAL

A well merited honor was accorded Dr. Waring by the Council October 17 in electing him Assistant to the Editor in Chief. Dr. Waring has for a number of years been an Associate Editor of the well known department in the Journal—South Caroliniana. This department was established by the initiative of Dr. Waring himself and designed for the first time to bring together in one place abstracts of the writings of the members of the profession in South Carolina as gleaned from Journals and books in any part of the world. This new departure met with instant favor on the part of the readers of the Journal. Dr. Waring will bring to the editorial columns of the journal a high type of scientific contributions as a result of his ripe scholarship and wide knowledge of medical literature.

After graduation from the Episcopal High School of Virginia in 1914 Dr. Waring continued his academic education at the College of Charleston and in 1917, graduated with an A.B. degree and was first honor man. In 1921 he graduated from the Medical College of the State of South Carolina, winning second honor. He had the benefit following his graduation of internships in various hospitals in the city of Charleston, including the Roper Hospital. After deciding to prepare himself for Pediatric practice, his graduate education included extended service at the Willard Parker Hospital and the Bellevue Hospital, New York, and Vanderbilt University Hospital, Nashville. Dr. Waring had an unusual service in public health for the Commonwealth Fund in Tennessee for a period of three years, where he was director of Pediatric Public Health activities. Upon returning to his native State and his native city, Dr. Waring became connected with the Medical College, where he rapidly rose through the various grades to be an Assistant Professor of Pediatrics. Dr. Waring is visiting Pediatrician to many of the hospitals and dispensaries in the city of Charleston. He is a member of numerous scientific societies both within and without the State.

Dr. Waring has made important contributions not only to the Journal of the South Carolina Medical Association, but to a large number of the most outstanding scientific publications in the United States. He has enriched the storehouse of medical history in this country, notably, through his contributions to the Annals of Medical History, one of the most widely known historical journals in the world. It is obvious that the Journal of the South Carolina Medical Association is most fortunate in having Dr. Waring assume this close relationship with the Editor in Chief, and we bespeak for him the loyal support of every doctor in South Carolina.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"CHRONIC CYSTIC MASTITIS"

In the past few years our concept of the nature of chronic cystic mastitis has almost completely changed. This has been due in great part to recent advances in the knowledge of the endocrine glands, particularly of the ovary and the pituitary. The term chronic cystic mastitis implies that the process is of an inflammatory nature caused by a low grade infection. For a long time this idea held sway. There is now a great deal of evidence that this is not the case, but that the changes in these breasts are the results of functional derangements. In a recent article published in the American Journal of Surgery XXVIII:452, May 1935, Dr. J. Stewart of Philadelphia supports this theory in a convincing manner and presents hypotheses concerning the etiology of the commonly associated adenofibromas and similar tumors.

The breasts undergo changes in the menstrual cycle similar to those in the uterus. They seem to be controlled by hormones from the graafian follicle and the corpus luteum which in turn are controlled by the pituitary. Somewhere between the fifth and fifteenth day of the menstrual cycle the breast is in the resting stage. At this time the fibrous stroma predominates and the epithelial elements consists of ducts and occasional acini. As the next menstrual period approaches the ducts enlarge and give off branches; new acini develop; the fibrous tissue softens so as to allow for expansion of the epithelial elements. Next is the period of involution which begins just before the next menstrual flow. Here the lining cells of the ducts and acini degenerate and are shed into the lumen of the ducts to be absorbed—not excreted, as rarely is there a post menstrual discharge from the nipple. Should pregnancy intervene, the premenstrual hypertrophy continues and lactation changes begin. Involution takes place after lactation ceases, however while most of the acini disappear the gland does not quite return to its former virginal state. After the menopause further involution occurs.

The breast is in an almost continuous state of change and varies greatly according to the stage of the menstrual cycle, lactation, or the menopause. As these changes are under the control of the ovarian hormones it is reasonable to believe that aberrations in their function would result in effects upon the breast just as it does upon the uterus. According to this view chronic cystic mastitis would be considered as the result of subinvolution. The primary condition being a hyperplasia of the epithelial or fibrous elements, either singly or in various combinations; the cysts being a secondary development resulting from retention. In the early stages in particular the condition varies a great deal with the menstrual cycle, and this should be taken into account in making the diagnosis.

As in other conditions tissues may be affected locally or diffusely, in the breast there may be local areas of hyperplasia. The author considers this a likely explanation of the origin of that group of benign tumors consisting of adenoma, adenofibroma and fibroadenoma. The argument is not carried so far as to attribute to this hormonal dysfunction the cause of cancer, nor is it even maintained that cancer develops from a pre-existing chronic cystic mastitis. However the fact remains that cancer is associated with chronic cystic mastitis in 15 to 20 per cent of the cases. Further knowledge concerning the etiology of cancer must be obtained before a causative relationship could be established.

On account of its frequent association with cancer it is important that we establish some safe working rule to guide in the treatment of chronic cystic mastitis and that group of benign tumors which not unlikely have a similar origin. The author suggests the following: local excision of adenofibromas; for papillary cystadenomas, representing a further advance in epithelial activity in women over 35, ampu-

tation of the breast; in chronic cyctic mastitis in patients under 35, where the lump or lumps vary in size and become smaller during resting phase, no surgical treatment is necessary—but where the lump persists or becomes larger it should be excised for microscopic study; in patients over 35 where after two months observation the lump or lumps do not change appreciably, amputation of the breast should be done with facilities at hand for frozen section examinations of suspicious areas. Emphasis is again placed upon early operation as giving the only reasonable hope of cure in cancer. To quote Dr. Rodman—"The more I see and operate on cancer of the breast when it can without question be diagnosed as such, the more discouraged I become over the possibility of a radical cure."

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

USE OF COLEY'S MIXED TOXINS IN OPHTHALMOLOGY

Dr. J. Levine

Arch. of Ophthal., Oct., 1935, p. 554

In the final analysis recovery from an infection depends upon vital resistance. Vital resistance, on the other hand, is such a variable and sometimes deficient factor that it is of little value. Hence there have been many service stations, places for stepping up the strength of the vital current, similar to those that Michel Lupin invented for electrical use. Each has had it advocates—and objectors. Milk, Omnadin, Aolin, and Typhoid vaccine. Dr. Joseph Levine, in the Archives of Ophthalmology, Oct., 1935, writes another article on Coley's fluid (the first was in the Archives of Ophthalmology, 6:75, July, 1931). It is a concentrated bacterial vaccine, used intramuscularly, deltoid, in a 1 to 3 mm. (0.06 to 0.18 cc) dosage. Repeated every third day as necessary, depending upon the response and reaction, just as with other forms of foreign protein. A tuberculin syringe makes it convenient to use. The reaction may be controlled by applications of cold water to the side of the injection. The fever, 101 to 103, does not come on for six hours, giving the patient time to get home. The dose is small and the cost is little. No complications have been reported.

The usual precautions in diabetic, arteriosclerotic, tuberculous, nephritic, and cachectic patients are to be observed.

Coley's fluid is beneficial in cases of: acute iritis; keratitis; kerato-iritis; cyclitis; iridocyclitis; uveitis; secondary glaucoma due to any one of the preceding conditions; and sympathetic ophthalmia. The results are often astounding, as all who have used it can attest.

Do not use salicyclates at the same time, for they prevent the rise of temperature, and Dr. Levine feels that a temperature rise is essential to get beneficial results. So do not fear the temperature rise, and hospitalization is unnecessary.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 294 (26428) SEPTEMBER 27, 1935

Service of Dr. Waring

Student Able (presenting case history):

Negro female, age 1 year 4 months, admitted 5-4-35, died 5-7-35.

Mother stated that child had had almost a continuous cold and fever since the first of January, 1935. Cough developed in February. On 4-11-35 child was brought to clinic, the mother stating that the child had been having "convulsions" (no description given) every day for one week. Both ear drums were thought to be bulging at that time, and both were incised but no pus was obtained. Temp. 101.6 at that time. 5 days later the ears were not discharging, and no cause for the continued fever (101) could be found after a complete examination. 4 days before admission the baby's body became stiff, with the head thrown back. The following day it was noted that the right side of the baby's body was useless and that there was no "feeling" in it. Unable to take nourishment since that date.

Diet: Breast-fed until 13 months, with cereals, potatoes and orange juice since. No cod liver oil. No inoculations or vaccines.

Family History: Mother had had a positive Wassermann, received several "shots". There had been 2 miscarriages. Grandfather and maternal uncle had tuberculosis, exposure not stated.

Physical Examination: A well developed but poorly nourished child, Temp. 101, pulse 152, resp. 28. Skin, head, sinuses negative. Right pupil irregular, does not react to light, posterior synechiae present. Ear drums slightly injected. Tonsils markedly enlarged. Anterior cervical glands palpable. No positive findings in heart, lungs, mediastinum or abdomen. A flaccid paralysis of right arm and leg noted, with anesthesia. Both knee-jerks hyperactive, no ankle clonus, no Babinski. Kernigs positive.

Laboratory: Urine—Albumin 1 plus, 2-3 pus cells to H.P.F., 2-3 erythrocytes to H.P.F., other constituents normal. Blood (5-5): Hb. 82 per cent (Dare), WBC 17,200, polys 88 per cent, lymphs 9 per cent, monos 1 per cent, eosinos 1 per cent, basos 1 per cent. Spinal fluid (5-4): pressure "increased", fluid clear, total cells 60 per cu. mm., lymphs 60 per cent, polys 40 per cent, globulin 3 plus, no organisms seen on stained smear, culture "staphylococcus present"?. Collodial gold curve 0001112100; spinal fluid Wassermann negative. Spinal fluid (5-5-35): pressure "increased", clear, total cells 28 per cu. mm., lymphs 80 per cent, polys 20 per cent, globulin 2 plus, sugar 1 plus. No organisms seen on stained smear. Culture "staphylococcus present"(?). Stool examination normal.

Course: Temperature remained about the same, falling gradually during last 24 hrs., pulse became more rapid, finally imperceptible. Respirations 48-72 for last 52 hrs. Purulent exudate in both eyes for last 2 days. Convulsive movements noted, not described. Ceased to breathe on 5-7-35 at 11:55 A.M.

Dr. Robert Wilson: Mr. Gasner, will you open the discussion?

Student Gasner: We have a history of a child 16 months old, with opisthotonos present for 4 days before admission, and with a positive Kernig's sign. It appears very probable that the child had a meningitis of some form, and the difficulty is to determine the type of meningitis. It could be a tuberculous meningitis, a syphilitic meningitis, a meningococcus meningitis, or a brain abscess following middle ear infection.

Against abscess of the brain following middle ear infection, we have the record to show that the ear infection was questionable. If a meningitis followed brain abscess, we would expect a frankly cloudy spinal fluid, with a higher cell count and a predominance of polymorphonuclear cells.

A meningococcus meningitis would be expected to give a daily rise in temperature above

the highest level recorded in this case. Purpuric spots would probably have been noted in the skin. More important than these facts, however, is the nature of the spinal fluid, without the frankly purulent fluid, the high poly count, and without the organisms being found in the fluid, as would certainly be expected this late in a case of meningococcus meningitis.

If this were a case of syphilitic meningitis, we would expect other signs of congenital syphilis to have been present, as an enlarged liver or spleen, or a periostitis. The fact that the spinal fluid Wassermann was negative is of some importance, altho the negative reaction does not exclude the possibility of syphilis.

Coming back, then, to the possibility of tuberculous meningitis, we have here a family history of tuberculosis, altho it is not stated whether or not the child has been exposed to the disease. There is a history of a "cold" and fever for several months before the onset of the meningeal symptoms. The spinal fluid findings are quite characteristic of tuberculous meningitis. The convulsions were doubtless due to an irritative process in the meninges, before the actual onset of the severe lesion there. The hemiplegia developed later, when the inflammatory process was well established.

I neglected to mention the possibility of poliomyelitis before, but there seems to be little to suggest that diagnosis. To begin with a hemiplegia would be uncommon in that disease. The deep reflexes should be abolished if the lesion were in the lower motor neurone instead of the upper.

Summing up, it seems to me that, by exclusion, the diagnosis of tuberculous meningitis must be made.

Dr. Wilson: What influence does the family history of tuberculosis have upon your diagnosis?

Student Gasner: The history of familial tuberculosis would not be important if we could exclude the possibility of exposure to the disease but we cannot rule that out in this case.

Dr. Wilson: Mr. Baker, what are your ideas about the case?

Student Baker: I believe that most of the recorded facts in the case point towards tuberculosis. The ear infection may have been a non-suppurative otitis, and possibly itself a tuberculous manifestation. It is not unlikely that a miliary tuberculosis was present, as tuberculous meningitis is usually part of a miliary tuberculosis. The nature of the spinal fluid, without cloudiness, moderate increase of cells, with lymphocytes predominating, suggests tuberculous meningitis. The colloidal gold curve, while not characteristic, is not an unusual one for this condition. I believe the primary source of the dissemination was in the lungs.

Dr. Wilson: Mr. Gasner, I didn't ask you for your idea as to the primary source. Where do you judge it was?

Student Gasner: I believe that it was in the lung. On the other hand, it could have been in the lymph glands; the cervical nodes were palpable.

Dr. Wilson: Mr. Goodlett, what do you think of the case?

Student Goodlett: I am in favor of the tuberculous explanation of the case, and believe that the primary focus was in the lungs; there is a history of family exposure, of a cough and fever for four months. Termination by miliary tuberculosis and a tuberculous meningitis is common in such cases.

Dr. Wilson: As the clinician who handled this case is not here, and as Mr. Able is his proxy, we will get him to read the final diagnosis as recorded on the chart, and to defend it.

Student Able: The clinical diagnosis recorded are (reading): "Tuberculous Encephalitis, Tuberculous Meningitis, Tuberculosis of the Lung, Diffuse Tuberculosis."

When tuberculous meningitis is present, it can be assumed that there is a generalized dissemination, as the bacilli must reach the brain by the blood stream, and there is no reason for them to choose the vessels to the brain rather than those to other organs. While no tuberculosis was found in the lungs by physical examination, and the patient died before her x-ray was taken, still pulmonary tuberculosis can be diagnosed by inference; there are symptoms pointing to the lungs, there is a probability of exposure by inhalation. Too, the lungs are the commonest primary source.

Dr. Wilson: There is no record of any discharge from the ears; in fact the evidence of

ear disease is very scant. However, we know that meningitis occasionally does develop following otitis media, usually due to a pneumococcus, commonly the Type III pneumococcus. How would you rule out such a possibility?

Student Able: In the first place, I would expect that there would be definite evidence of otitis, and that the myringotomy would have shown pus. With a pneumococcus meningitis, the temperature would have been higher. And even more important, the spinal fluid would have been more cloudy, and the polymorphonuclears would have predominated instead of the lymphocytes.

Dr. Johnson: As regards the laboratory findings here, the spinal fluid suggests a chronic condition, as a tuberculous meningitis, an encephalitis or a poliomyelitis. These cannot be differentiated on the basis of a cellular study of the spinal fluid. But if a quantitative determination of the chlorides and the sugar in the spinal fluid had been done, and these had been found to be low, that would have been rather definite evidence in favor of tuberculous meningitis rather than the other two conditions. The failure to find tubercle bacilli in the spinal fluid is not so important; in order to find them, they must be searched for a long time, even in specimens that have been concentrated. The colloidal gold curve also suggests a chronic condition, and is also not characteristic of any one condition; syphilis and tuberculosis may both give this slight rise in the middle portion of the curve.

It is probable that the staphylococcus that was cultured from the spinal fluid twice represents a contamination, as the staphyloccus gives a purulent meningitis, and the fluid would then have been cloudy, with many polys present.

Dr. Cannon: I want to comment on something that seems to have been carefully passed over in the various discussions, and the thing that is to me the most outstanding part of the case. That is the hemiplegia. No generalized process, limited to the meninges, would be apt to give a hemiplegia. Rather the process would have to extend into the brain itself. The term "tuberculous encephalitis" that has been mentioned several times might conceivably do it, but a diffuse inflammation of the brain due to the tubercle bacillus, which the term implies, is probably exceedingly rare. It seems to me that there is a localized tuberculous process involving the cortex of the brain as well as the meninges, and probably of the order of a tuberculoma.

Dr. Wilson: Mr. Able, how about that hemiplegia?

Student Able: I think that the cortex of the brain must have been involved as well as the meninges, and that the lesion must have been in the motor area of the left cerebral hemisphere.

Dr. Wilson: The actual naming of the process in the brain is not important, except that we must conclude whether or not the process was tuberculous. It may be a tuberculous encephalitis, or a tuberculoma of the brain with a compression of the motor area. Hemiplegia, of course, is not common in a simple case of tuberculous meningitis. The possibility of cerebral hemorrhage in this infant has not been mentioned. That is a possibility, but unlikely.

Student Pernwerth: Will you explain the hyperactive reflexes in the presence of a flaccid paralysis?

Dr. Wilson: The first stage of a paralysis of upper motor neurone origin is usually flaccid, followed later by spasticity. The reflexes in this early stage are variable.

Dr. Lynch: We talk much about "childhood tuberculosis," its peculiar anatomical distribution and its course, differing from the "adult" form of tuberculosis. Only the initial infection by the tubercle bacillus gives this type of complex, and, as most of us are first infected in early childhood, that term is used, altho the same complex will occur in the infected adult if he has not been previously exposed.

The reason for the difference between the childhood and the adult forms is to be found in the lack of acquiring immunity in the former. There is no attempt at localization of the process by fibrosis in the childhood type, and caseation extends until the body is able to throw off the infection, to build up an immunity which helps to localize the infection, or else succumbs to it. As caseation progresses, the bacilli pass thru the lymphatic channels to regional lymph glands, and caseation is set up there. If not

arrested at this point, the bacilli commonly enter the blood stream by the lymphatic route, and a generalized blood-borne dissemination will result. Childhood tuberculosis, at least in the negro, is commonly fatal.

The case under discussion showed the typical pulmonary lesion of childhood tuberculosis. There was a massive caseation of the whole right upper lobe, with partial liquefaction, and sloughing, resulting in a small cavity. The draining lymph nodes, bronchial, tracheo-bronchial and mediastinal, were greatly enlarged and caseous. The lung, as well as almost all the other organs, showed a miliary tuberculosis as well. In this case the tuberculous meningitis was part of a generalized miliary tuberculosis, and that is the usual finding.

The unusual clinical picture in this case was the result of the unusual distribution of the intracranial lesions.

As you can see here (demonstrating autopsy specimens), the motor area of the left side of the brain is heavily studded with tubercles, not of the usual miliary form, but much larger, and the caseation extends into the cortex for several millimeters. This may represent the "tuberculous encephalitis" that has been mentioned today, but that term is not a good one, as the lesion here is simply an extension from the meninges into the cerebrum, and not the widespread inflammation that the term "encephalitis" implies. While the lesion here is hardly large enough to call a tuberculoma, which grossly resembles a tumor, still it is certainly much more than the ordinary meningitis. There is also a similar involvement in the occipital lobe of the left side, about the calcarine fissure. In an adult that would probably result in a homonymous hemianopsia, but in a child of this age, that would not be recognized.

Besides the extensive caseation of the right upper lobe of the lung, and the miliary tuberculosis of all lobes, there was an early tuberculous pneumonia of the upper lobe on the left, with a consolidation that grossly resembled that of pneumococcus lobar pneumonia.

The relatively sudden onset of the hemiplegia in this case may have been due to a thrombosis within the involved portion of the brain; this was evident in the microscopic sections, and was associated with an actual arteritis.

The anesthesia recorded in this case has not been commented on; it may not be significant. The cortical lesion did extend anterior to the fissure of Rolando for a short distance, into the sensory gyrus. But a child nearly in coma, who can not withdraw a stimulated limb because of paralysis, may appear to have an anesthesia without one being present.

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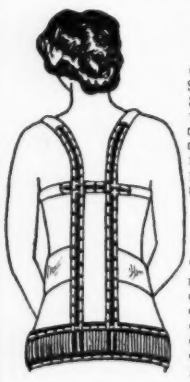

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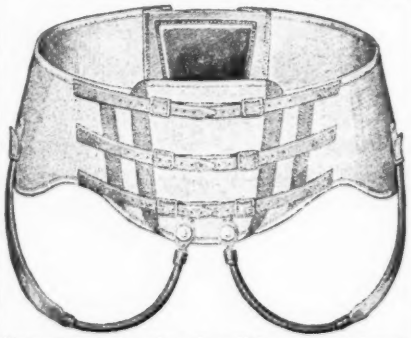

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OBSTETRICS AND GYNECOLOGY

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Acting under authority of a resolution adopted by the Council at the last meeting of the State Association, Dr. Samuel E. Harmon, has appointed a committee on maternal health and child welfare. Dr. Robert E. Seibels is the chairman of this committee. This committee has been instructed to make a study of the causes which underlie the high maternal and infant mortality in our state, and to recommend, so far as it can, corrective measures. It will maintain liaison with the American Committee on Maternal Welfare, Inc. and cooperate with it in its national program.

Dr. Seibels' committee, acting under the leadership of its energetic and able chairman, has already done much preliminary work. The cooperation and assistance of the executive committee of the State Board of Health has been sought and willingly granted, and Dr. Adams Hayne, State Health officer, has asked the health unit in each county, where one exists, to assist in the work of the committee, so far as it is able.

The committee has decided that its first task should be a detailed survey of the maternal deaths which occurred in South Carolina during the fiscal year 1934-1935. This is similar to surveys already completed in New York, Pennsylvania and Georgia. This survey should show the effect of the use of midwives upon maternal mortality. It should indicate what relationship exists between lack of prenatal medical supervision and an increased mortality, and it should disclose a percentage (10 percent in Georgia) of deaths, classified as parturitional, in which pregnancy was simply coincidental rather than the cause of death.

In order for this survey to be of real value it has to be both detailed and comprehensive, and for it to be so, the committee must have the cordial and whole hearted cooperation of doctors in attendance upon patients who died during the period under study. There will be no effort to criticise individual doctors concerned in their methods of handling maternity cases. The purpose is purely fact finding. It is realized by every member of the committee, each of whom had maternal deaths occurring in the period to be studied, that adverse conditions, and lack of adequate facilities may vitiate the best personal skill and judgment. They know too that ignorance upon the part of the patient, preventing intelligent cooperation with the physician, is necessarily a factor, and frequently a major factor in the outcome of any given case. How great a factor this condition is as a statewide cause of death, the committee will attempt to determine.

This survey will be made without expense to the State association, but at a great cost in time and energy upon the part of the members of the committee. The sympathetic cooperation of the doctors who will be interviewed during the survey is earnestly requested.

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The Medical Auxiliary to the Oconee County Medical Association met with Mrs. E. C. Doyle on November 1st, in Seneca, S. C.

The meeting was called to order by the President, Mrs. E. C. Doyle.

Roll call was answered by five members, who gave the name of their favorite medicine.

Minutes of the last meeting were read and approved.

The Treasurer, Mrs. J. W. Bell, reported:

Dues paid	$9.00
Student Loan Fund	6.00
Birthday Fund	2.68
D. A. R. Schools Bed Fund	2.00
Paid out Student Fund	$6.00
Balance on hand	$13.68

Contributions made were as follows: Mrs. E. A. Hines contributed a box of clothing for the needy to the County Nurse, Miss Margaret Harry.

D. A. R. School Bed Fund contributions were: Five dollars by Mrs. E. C. Doyle as proceeds from rummage sale held by Mesdames Doyle, Hines and Marett.

One dollar, Mrs. J. E. Orr. One dollar, Mrs. Wendell Brennecke.

Visitors introduced and welcomed by the President were Mrs. C. N. Gignillat of Seneca, S. C., Mrs. Osborne of Spartanburg, and Mrs. Owens of Sumter, S. C.

The resignation of Mrs. J. W. Bell as Treasurer was presented and accepted with regrets. Mrs. Wendell Brennecke was elected to fill her unexpired term.

Communication was read from Mrs. James D. Lester, who asks that the Auxiliary members awaken to the value and necessity of instruction of hygeine in the schools, and their cooperation in carrying on this great work.

Program

Reading—Doctor's Wives, By Mrs. E. A. Hines. In her most charming way Mrs. Hines paid a tribute to the Doctors' Wives.

A beautiful an inspiring thought was brought to us on "All Saint's Day", by the rendition of "The Legend of the Holy Shadow."

Brief Talks—Saddle Back Days, Mesdames Bell, Doyle, Hines, and Osborne.

At the conclusion of the program the meeting adjourned, followed by the social hour.

A delicious salad course with Russian tea was served by the hostess.

Mrs. E. C. Doyle, President.
Mrs. Wendell S. Brennecke, Sec. & Treas.

STATE MEDICAL AUXILIARY BOARD ENTERTAINED HERE

At 1 o'clock yesterday, a lovely luncheon was given in the English room of the Hotel Columbia by the members of the auxiliary to the Richland County Medical society, after the meeting of the medical auxiliary's state executive board. Mrs. Clarence E. Owens of Columbia, state president of the auxiliary to the South Carolina Medical society, was the honor guest at the luncheon, which was in charge of Mrs. Ben Wyman and Mrs. P. Eugene Payne. Two large green bowls of vari-colored chrysanthemums adorned the table.

Invited to be present were the following women who are serving the state auxiliary in various capacities and who are members of the executive board: Mrs. Frank Strait, the state auxiliary's president-elect; Mrs. J. Warren White of Greenville, state vice president; Mrs. Izard Josey, Columbia, state secretary; Mrs. Thomas Pitts, Columbia, state treasurer; Mrs. Riddick, Ackerman, Walterboro; Mrs. Price Timmerman of Batesburg, Mrs. L. J. Blake, Spartanburg; Mrs. Shippey, Rock Hill; Mrs. J. R. Dunn, Sumter, state counsellors; Mrs. L. O. Mauldin, and Mrs. C. P. Corn, both of Greenville, Mrs. E. C. Doyle, Seneca; Mrs. A.

O. Holman, Timmonsville; Mrs. W. C. Abel, Columbia; Mrs. H. M. Stuckey, Sumter, state chairman; Mrs. J. Carroll Brown, Walterboro; Mrs. J. D. Ariail, Greenville; Mrs. J. C. Pepper, Easley; Mrs. Barton, Anderson, Mrs. Roddey Miller, Rock Hill; Mrs. W. C. Whitesides, York; Mrs. O. T. Finklea, Florence, co-presidents.

From the State Sept. 14, 1935.

RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary met with Mrs. W. P. Timmerman, October 21, 1935. The regular program was called off and the meeting turned over to the State Medical Auxiliary President—Mrs. C. E. Owens of Columbia. Mrs. Owens is a very vivacious and charming speaker. Her address on the work of the Auxiliary was quite interesting and instructive. She explained the different lines of work of the Auxiliary. She stressed the Student Loan Fund. At the close of the meeting, the hostess assisted by her daughter Mrs. Dickert served a delicious chicken salad course.

The Ridge Medical Auxiliary holds its regular meetings every two months at the home of one of its members. A committee is elected to plan a year book—each member is presented with a copy. These are the subjects on which papers are to be written by members of this Auxiliary during the present year: "First Aid in Accidents or Sudden Illness of Children." "Dr. Crawford Long." "Life of a Doctor's Wife in the Past and Present." "Rheumatism." "First Aid in Accidents" or Sudden Illness of Adults." "How Can a Doctor's Wife Help her Husband?" "Insomnia." "Accidents That May Be Avoided." "Aids and Cures for T. B. Sufferers."

The Secretary collects reports of the activities of the members on such subjects as visits and flowers to the sick, trays and rides, garments, kind deeds, etc. The Student Loan Fund and plans for raising money are discussed. In addition to two papers at each meeting, special music is rendered and readings are given, sometimes a contest is enjoyed. The entertaining hostess serves delicious refreshments and the Auxiliary enjoys a social hour. The meetings are so interesting the members of the Auxiliary look forward with pleasure to the meetings of the Auxiliary. Special program of entertainment is given at the Christmas program and once a year the Auxiliary entertains the doctors with a dinner or supper.

The Pickens County Medical Auxiliary sponsored an address on Child's Welfare Work by Mrs. J. M. Holmes, Supt., General Hospital in Greenville, S. C. The public and all Clubs were invited to hear Mrs. Holmes, who spoke at the Easley High School Auditorium, May 16th. Immediately afterwards, Mrs. W. B. Furman entertained informally at her home on Main Street, members of the Pickens County Medical Auxiliary, the Pickens County Medical Society, the Pickens County Health Unit and the Pickens County Board of Health.

Mrs. W. B. Furman, Publicity Chairman
for Medical Auxiliary.

ASSOCIATION NEWS ITEMS

The South Carolina Medical Association will meet in Greenville, April 21, 22, 23, 1936, under the Presidency of Dr. S. E. Harmon of Columbia. Dr. George W. Crile of Cleveland, Ohio, will deliver the oration in surgery. Dr. W. B. Porter of Richmond, Virginia, will deliver the oration in medicine.

The program committee consisting of Dr. George R. Wilkinson, Chairman, Greenville, Dr. R. M. Pollitzer, Dr. Jack Jervey, Dr. C. O. Bates, all of Greenville met recently with President Harmon and President Elect R. C. Bruce, and discussed the preliminary arrangements and scope of the program for the next meeting. The program will be limited as usual to about fifteen papers and abstracts of these papers will be requested by the Committee.

It was decided to curtail the usual introductory exercises and start right in with the scientific program at 10 A. M. on Wednesday, April 22 and close the meeting promptly at noon on Thursday, April 23.

The House of Delegates will meet on Tuesday night, April 21. The entertainment features for the Association, will be decided upon later.

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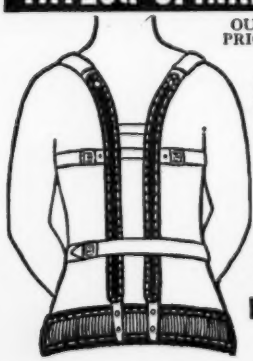

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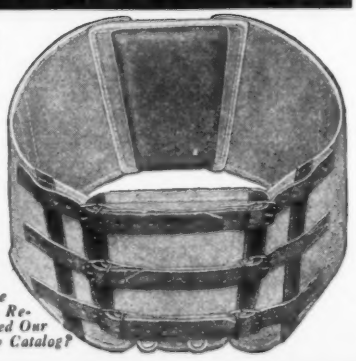

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SURGICAL JUDGMENT IN OUR APPROACH TO THE ACUTE ABDOMEN

By

LeGRAND GUERRY, M.D.
Columbia, S. C.

We are constantly drawing this distinction between an operator and a surgeon. Defining an operator as one who is concerned primarily with problems of methods and technic or as it were the ritual of surgery. Such a person is not greatly concerned with the broad fundamental principles of medicine that underlie the practice of good surgery.

On the other hand, we like to think of a surgeon as one who has been broadly educated, who possesses philosophical background, who is more concerned with principles than with the technic of method, who understands that the basis of good surgery is good medicine, who has mental capacity and grasp to deal with the spectral doubts that lie outside of the operating room, and who understands when and where to operate as well as how to operate.

This is just another way of saying that we intend to discuss for the few moments at our disposal the subtle problem of judgment; specifically surgical judgment. Just at this point it may be well to define judgment in the language of Webster: "The word judgment has its derivation from the Latin word Judicare and is defined as 'The act of judging; the operation of the mind, involving comparison and discrimination, by which a knowledge of moral qualities, intellectual concepts, logical propositions, or material facts, is obtained. The power or faculty of performing such operations when unqualified, the faculty of judging or deciding rightly, justly, or wisely, good sense."

To my thinking it is impossible to discuss properly the approach to the acute abdomen without a consideration of surgical judgment since the two things are well-nigh synonymous terms. The reason for this is not far to seek. The mistakes of surgical judgment in handling the great crises of the acute abdomen can be quickly turned into fatalities. The fate of these cases depends, not primarily on a technic and method of operation, but are indissolubly connected with clear, precise, discriminating judgment.

The surgeon who properly correlates his facts, wisely interprets them, who uses the clearest judgment in the application of these facts to the individual case, will always have the best results. This is a principle that is germane to the whole range of human thought and action. It is true in business; it is true in law; it is true in general medicine; it is true in surgery.

This is the reason, certainly one of the reasons, why problems of judgment so vastly outweigh in importance methods of technical performance.

Sir Frederick Treves, one of the keenest and most philosophical minds in the field of surgery, has given us this aphorism:—"Shakiness of the hand may be some bar to the successful performance of an operation, but he of a shaky mind is hopeless."

To illustrate:—An ordinary supra-vaginal hysterectomy for an uncomplicated uterine fibroid tumor in an otherwise sound and healthy woman, does not call for the exercise of any special amount of judgment; it is a conventional operation, with ample time not only to prepare the patient, but to fix and determine the conditions under which the operation shall be done. It becomes at once obvious in such a case that method of operating and technic of perform-

ance, take the position of primary importance.

How vastly different is the problem however, in the case of a man with a bullet wound through his abdomen. When you see him for the first time he is in profound shock, feeble rapid pulse, cold clammy leaky skin, subnormal temperature, cyanosis, air hunger, and probably intra-peritoneal hemorrhage. The threshold of his vitality and resistance has been forced down to the lowest possible level, well-nigh anything done to him would be enough to push him over.

How are you going to handle such a case, Take him to the operating room and operate immediately? I think not. For this situation imposes on us not only difficulties of handicraftsmanship, but the far weightier problems of when to interfere. Surely the patient would be better off to take sufficient time to improve his general condition; namely: by getting him warm, by giving him sufficient morphine to relieve his pain, by raising his fluid level, by giving him time to react from the primary shock of the injury, by blood transfusion, etc.

One of the most serious problems in connection with the acute abdomen, particularly so and always present in the matter of penetrating wounds, is the question of hemorrhage. It is serious enough to be responsible for a large number of deaths from this source. Many of these patients die from hemorrhage long before the stage of peritonitis has been reached. Our position about the surgical handling of such cases may be stated as follows: We believe it to be a great mistake to take these patients with penetrating, perforating bullet wounds of the abdomen that come in in a condition of profound shock, with or without hemorrhage, rush them to the operating room and operate immediately. If you do so you are inviting disaster and an excessively high mortality. Specifically as regards the problem of hemorrhage we must remember that in the presence of traumatic shock it takes comparatively little loss of blood to produce a profound circulatory disturbance.

Often we have had this experience: In cases of perforating wounds of the abdomen with hemorrhage, we have operated and repaired ten or twelve perforations, practically emptied the abdomen of blood and completed the operation without finding the source of hemorrhage. An irregular tear in a small vessel coupled with a profound drop in blood pressure, permits thrombosis of the vessels thereby controlling the hemorrhage before the operation is undertaken. This is one of the main reasons why we never operate with precipitate haste. On the other hand proponents of immediate interference will occasionally take part in the dramatic episode of saving a life by finding and controlling the bleeding from a larger vessel. In so doing however, they will sacrifice ten lives for the purpose of saving one. We believe this to be bad surgery.

Let me repeat as indicated above, much of the time through the operation of natural forces the bleeding will already have stopped.

And remember this; that even in the presence of perforated intestine, it takes time to develop a spreading peritonitis. There may be immediate local soiling but not a true peritonitis. This takes time to develop; several hours of time at that. In many cases you have ten or fifteen hours on which operation can be deferred with advantage.

Some years ago I published a paper on "Penetrating Gunshot Wounds of the Abdomen" in which there were reported 27 cases with a mortality of about 10 per cent. I am perfectly convinced that a number of these cases were saved by taking the necessary time to improve the patient's condition before operating.

Another illustration: A woman, age 37, with an infected gall-bladder with stones, operated on December 4, 1931. Operation was the conventional cholecystectomy which was readily accomplished without any undue difficulty. She left the operating table in excellent condition. There was no problem up to this point to tax one's judgment or surgical resource. What an amazing difference to find the patient on the same afternoon about 5 o'clock inarticulo-mortis from an intra-abdominal hemorrhage. Surely, here we were in the presence of a real emergency. The customary thing to do under such circumstances would be to give the patient an anesthetic, reopen the abdomen, and stop the hemorrhage.

The patient was carried to the operating room in her bed. I was convinced that the ligature on the cystic artery had slipped and that this was

the source of the hemorrhage. However, she was so nearly dead that it seemed to me and to my associates, that any attempt to open her abdomen would be immediately fatal. She was given a blood transfusion of about 500 c. c. Her condition improved but very little. After waiting several hours expecting her death at any moment, we gave her another blood transfusion of 500 c. c. To this transfusion she made definite, though slight, improvement. Even up to this point her condition was so precarious that we were afraid to make any formal effort at stopping the hemorrhage. Early the next morning we could be reasonably certain, through observation of the gauze drainage and cutting of one suture next to the drain, that she had had no further bleeding.

To make a long story short, this patient was never reoperated on. At this time she is perfectly well, and we believe that her recovery was due to the fact that she was simply "waited out" and that no operative effort was made to control the bleeding from the cystic artery.

You can see the point that I am trying to make: The problem in the first instance was the simple problem of doing a conventional cholecystectomy. Faced in the second instance with immediate death from a surgical calamity, the great problem involved was one of discriminating surgical judgment, and on the correctness of this judgment hinged the matter of life and death.

This much we absolutely know: that the patient is today alive and well and no secondary operation was performed for the relief of her hemorrhage.

An old axiom of medicine and surgery is to give the patient every possible chance. It is a very easy thing in the presence of such an emergency as outlined above, to deprive the patient of their only chance.

The physician or surgeon who learns properly to evaluate the "vis medicatrix naturae" has attained the beginning of wisdom. There is scarcely any limit to her capacity to help.

We could continue indefinitely with similar illustrations to prove that in the handling of the acute abdomen this thing of discriminating judgment, wrought out of a background of clinical experience, is the great desideratum.

We have only time to hint at the difference of the problem involved in an unruptured appendix on the one hand and a perforated appendix with peritonitis on the other; or a simple cholecystitis as against a perforated gall-bladder with peritonitis; or a simple cyst of the thyroid as against an intensely toxic hyperplastic thyroid; or a simple duodenal ulcer as against a perforating duodenal ulcer. And so on we could furnish illustrative cases to the very end of the chapter.

After an experience of a bit better than thirty years, there is no problem in surgery about which I have altered my attitude more thoroughly than in the matter of the acute abdomen. This business of rushing into the acute abdomen with precipitate haste, simply because it is acute, is all wrong and carries with it its own label of incompetency. In many, many cases the urgent thing to do in the acute abdomen is to leave the patient to the unimpeded efforts of nature. The operator simply has before him the problem of operative interference, while the surgeon possessed of discriminating judgment will be, or should be, able to separate the cases that need prompt intervention from those whose chance for life would be conserved by reasonable delay.

The surgeon who puts aside sound judgment and precise anatomical knowledge for the age old axiom of "cut and tie," will surely "reap the reward of his labors."

May we now take a more intimate view of our subject.

1.

Don't be in too great haste to operate. Nearly always there is ample time, not only to be reasonably sure of your position, but to improve the patient's general condition. The surgeon should control the initiative and dictate the terms under which the battle is to be fought. The easiest way to make a fatal error in judgment is to be hurried.

2.

Don't delay operating unduly in the hope of making a complete diagnosis. Certainly this is true in the presence of the acute abdomen. A complete diagnosis much of the time is impossible. I do not worry too much now-a-days about the question of diagnosis in the presence of a surgical abdomen. What gives me endless

concern is this: Are the indications sufficiently clear for going in? There is ample time for complete diagnosis when the abdomen is opened. Understand me here; I am not belittling diagnosis for it is one of our sheet anchors. We must keep a clear perspective and properly evaluate the patient's condition.

3.

Don't, please don't, continue the vicious practice of using purgatives in the presence of acute lesions of the abdominal cavity. This is a trite statement, and very much has been written about it, however, patients continue to come in day in and day out in which this fundamental point has been disregarded.

Many of our ablest surgeons contend that there is no such thing as a diffuse peritonitis following a perforated appendix in which purgative medicines have not been used. This may not be literally true but there is a vast amount of truth in the statement. Purgation is the very badge of ignorance so far as the acute abdomen is concerned. Purgation in the presence of an acute intraperitoneal infection may readily be fatal.

4.

Don't give morphine until the diagnosis has been made or until you are reasonably certain that operation is to be done. It will surely mask the symptoms and lull you into a false sense of security. The truth of the matter is this: morphine puts two people to sleep; the patient on the one hand and the doctor on the other. Also remember that if it takes more than one half grain of morphine to relieve an attack of appendicitis it likely means that you are not dealing with appendicitis but probably with stones in the gall-bladder, kidney or ureter.

When once decision is made for operation, particularly in the presence of intraperitoneal suppuration, we must be thorough and radical in our handling of the pathological process. Adequate drainage is one of the essential elements of success. The very popular statement of "when in doubt don't drain" may be witty after a fashion, but it is altogether vicious as a surgical principle. I am afraid of pus in the abdomen. It matters not what its origin or what the amount. If we handle intra-abdominal suppuration carelessly we will come to know the meaning of the appellation—"Trickster."

6.

Don't fail to grasp the difference between a contaminated wound and an infected wound. I mean precisely this: In the presence of intraperitoneal suppuration, notably in reference to appendiceal abscess where there is obliged to be gross soiling of the tissues, if the technic and intraperitoneal toilet has been correct, drainage complete and thorough, closure of the wound properly handled, one can be practically sure of primary union in 85 per cent to 90 per cent of the cases, and a suppurative appendix can be well-nigh turned into a clean case so far as morbidity and confinement to the hospital is concerned. Such a wound we think of as a contaminated wound. If on the other hand the same identical wound is sewed up tight, hermetically sealed as it were, the wound will break down in 90 per cent of the cases with extensive suppuration. In this instance the wound is viewed as an infected wound. It is of basic surgical importance to remember that the pus that does the damage is the pus under pressure.

7.

Don't fail to remember that nothing so mars the convalescence of a patient or compromises more directly the result of an operation than wound infection. A simple but rigid, aseptic technic, gentleness and respect for the tissues in the manner of handling them are matters of primary importance. The size, the extent, the location of the incision, the readiness with which the incision gives the surgeon access to and control of, the field of operation, constitutes the epitome of operative surgery.

Knowing what not to do is just as important as knowing what to do. This is especially true in the presence of the acute abdomen, for the surgeon is a good surgeon who knows when he is doing harm and will quit.

I close by reminding you that the father of medicine has bequeathed to us this sage axiom —"Life is short; art is long; experience fallacious; judgment difficult."

SURGERY IN ROPER HOSPITAL

By

R. S. CATHCART AND J. I. WARING

Charleston, S. C.

When Thomas Roper of Charleston bequeathed to the Medical Society of South Carolina a sum for the establishment of a hospital, he laid the foundation for the development of a division of surgery which has been of inestimable service to the state, not only in its own technical accomplishments, but also in its position as a teaching unit which has given instruction to more than the majority of the surgeons of South Carolina.

Opened for the reception of patients in 1856, the hospital became active at a period in which surgery had yet to find its way to success. Anaesthesia had indeed been developed, and ether was administered in Charleston as early as 1847, but the field of antisepsis still awaited the coming of Pasteur and Lister. In the old records of the hospital there is no provision among the supplies for sterilizers or antiseptics. Pus was still laudable, and the boldest surgeon hung back from operations which today are ordinary procedures. Perhaps that fact explains the record of no surgical deaths in the hospital during its initial year of operation.

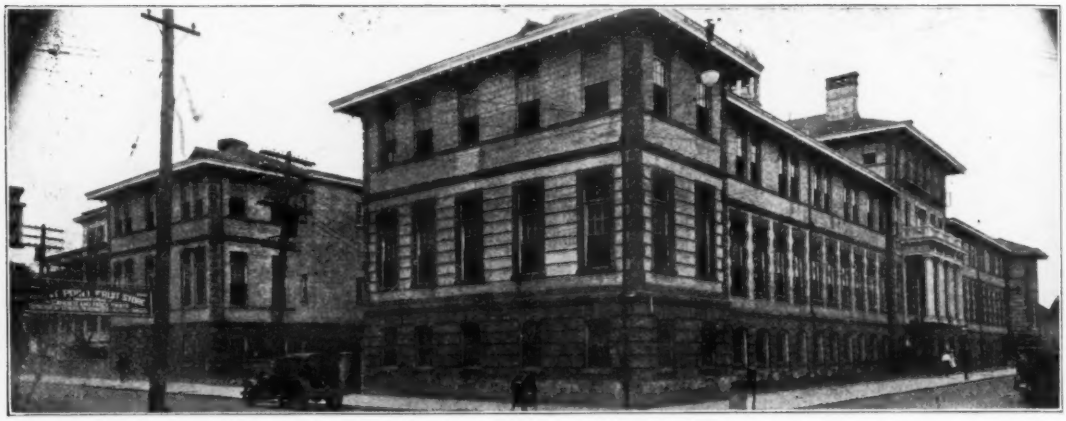
The first consulting surgeon of Roper Hospital was Eli Geddings, first physician to receive a degree at the Medical College of South Carolina, one time head of a private school of Anatomy and Surgery in Charleston, later Professor of Surgery in the Medical College of the State of South Carolina, Surgeon in the Confederate Army, publisher at one time of the Baltimore Medical and Surgical Journal, and national figure by reason of his surgical ability and achievements. Associated with him as attending surgeon was Dr. Robert A. Kinloch, later Professor of Surgery and Dean of the Medical College, one of the founders of the American Surgical Association, likewise head of a private course on surgery, inventor of several instruments, and surgeon for the Confederacy. To him is given the credit of being the first in America to resect the kneejoint (1856) and the first to treat fractures of the mandible by wiring. Above all his reputation rests on the laparatomy which he performed for resection of the intestine in 1867, probably the first in this country.

As the records show, such men as these would naturally be concerned with making improvements in the amphitheater, the operating room, the operating table, and the lighting of the new Roper Hospital. Doubtless the hospital physicians, who were at that time undergraduate students, since graduates were not available, found themselves under most able masters.

At the beginning the hospital became a teaching institution. Student tickets for admission to the lectures were used. Beside the general surgical cases, venereal cases in women were admitted to a special ward and furnished valuable clinical material. In 1857 attendance at the Hospital Clinics for one term was made requisite for graduation from the Medical College.

Some years later Dr. Julian Chisolm, author of the "Manual of Military Surgery" so widely used by the Confederate surgeons, became consulting surgeon, and added his store of knowledge and experience to the source from which the student drew his surgical training. His appointment coincided with the diffusion of the knowledge of Lister's inestimably valuable work in antisepsis. Not until many years later was the development of steam sterilization and the development of the ritual of the operating room (1891) to open the enormous field which modern surgery covers so splendidly. Even up to this later time surgery remained to be demanded by necessity, rather than used for expediency, and the scope of its accomplishments was still rigorously limited. Now opportunity was ripe for the work of such able men as Manning Simons, who performed laparotomy (1892) and many other operations, and R. B. Rhett, who was an active, bold and capable surgeon, performing at one period 216 operations in 199 days in addition to carrying on a tremendous general practice. Such work played an important part in spreading the knowledge of the great possibilities of surgery to the students who walked the wards of the hospital and later were scattered over all parts of the state and country.

Surgical instruction of students in the hospital was later under the able direction of Dr. J. Somers Buist, Professor of the Principles and



Roper Hospital, Charleston, S. C. Teaching Unit of the Medical College of the State of South Carolina.

Practice of Surgery in the Medical School. After him came Dr. Charles M. Rees, who lectured and operated upon the ample clinical material furnished by the wards.

The present Roper Hospital building is the successor of other structures. The first building was in Queen Street and a portion of it is still in use as a residence. This building was operated until 1873, after being in the hands of the Federal authorities during the Civil War, and was then leased to the city for a period of fifteen years. The earthquake of 1886 practically destroyed it, whereupon the city built a hospital on the site of the building used at present. This, however, was never approved or accepted as Roper Hospital by the Medical Society.

After many difficulties, the nucleus of the present group of buildings was developed. By the vigorous efforts of an able committee consisting of Drs. R. S. Cathcart, T. G. Simons, Robert Wilson, Walter Porcher, and Edward F. Parker, the construction of the new hospital was accomplished. The heads of the surgical department in the new structure were as follows: C. P. Aimar, General Surgery; A. J. Buist, Gynecology; R. S. Cathcart, Abdominal Surgery; W. H. Johnson, Orthopedics; and Lane Mullally, Obstetrics. Surgical diagnosis was soon aided considerably by the development of a department of roentgenology under Dr. A. R. Taft, and facilities for operative work were gradually improved by the purchase of adequate equipment. At the present time the hospital has four operating rooms, an emergency room, a surgical clinic, cystoscopic rooms, and ample accessories.

Roper Hospital has long been familiar to those readers of the Journal who are graduates of the Medical College of the State of South Carolina, and to those who have attended the many meetings, clinics, and conferences which have been held in its halls and operating rooms. The charity service provides a wide range of material for the continuation of the teaching which has always been a feature of Roper's activity. The possibilities for instruction are shown by the figures in the Annual Report of the Hospital for 1934. During that year there were 927 major operations, 4839 minor operations, 491 salvarsan administrations, 268 blood transfusions, 338 cystoscopies, 706 obstetrical deliveries, and 204 plaster applications.

The present active surgical staff is as follows:

Surgeon in Chief, R. S. Cathcart.

Gynecologists, A. J. Buist, R. L. McCrady and F. G. Cain.

Obstetricians, L. A. Wilson, H. W. deSaussure.

Urologists, J. J. Ravenel, P. W. Sanders, R. B. Gantt.

Surgeons, J. S. Rhame, T. E. Bowers, T. H. Martin, W. H. Prioleau, A. E. Baker

Orthopedist, F A. Hoshall.

Ophthalmologists & Otologists, E. F. Parker, J. F. Townsend.

Rhinologist & Laryngologist, J. E. Smith.

Ophthalmologists & Otolaryngologists, P. G. Jenkins, R. B. Rhett, R. M. Hope.

Thomas Roper, philanthropist, gave his legacy generously and wisely for the establishment of an institution which has done much to spread the achievements of surgery to the whole of South Carolina and beyond its borders. Other benefactors have added very considerably to the funds available for the care of the poor of the city and county. Donations and bequests made both before and after the period during which the hospital was operated by the city authorities have made up a total amount which allows for maintenance and progress. The Medical Society of South Carolina has administered these funds wisely and well for the good of the unfortunate members of the community.

HEAD INJURIES; THEIR MANAGEMENT AND TREATMENT

By

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The modern management of *head trauma* is based upon the fundamental knowledge of intracranial pressure and volume relationships. The beneficial methods at the disposal of the clinician are those which will control edema and prevent increase of intracranial pressure, (due to excessive fluid within the cranio-vertebral cavity) which heretofore have been the chief causes of disturbance to normal cerebral circulation and consequently the function of the brain and spinal cord.

In the last analysis, it becomes a question of our ability to adequately supply the brain with oxygen and nutrition, in spite of the many handicaps which may be presented through fractures of the skull, hemorrhage, or direct brain laceration. Intramedullary cerebral hemorrhage itself is rapidly and almost universally fatal when occurring in the region of the pons or in the substance of the brain near the thalamic structures. All methods now at our disposal fail to save a patient suffering from such a complication. It is therefore, evident that intelligent treatment must be based upon the care of those hemorrhages which are subarachnoid, subdural or epidural, and the hemorrhage, per se, (if the patient survives the third hour), must be considered in the light of its disturbance upon the remaining intact cerebral circulation.

The fracture of the skull is not a determining factor in these cases unless massive depression of the skull be such that it decreases the total volume of the cranio-vertebral cavity in such a way that the structures within are prevented from receiving their normal volume of blood.

It is evident that if the total volume of the cranio-vertebral cavity is decreased by reducing the space, there will not be sufficient room for the normal circulation of blood and the brain structures will suffer proportionately through compression and anemia. It is also evident that a subdural or epidural hematoma will decrease the volume of the cranio-vertebral cavity and of necessity some other component must be eliminated from the cavity to make way for this added and incompressible mass.

The relief obtained from the removal of an epidural or subdural clot is only of value in that it permits a return of blood volume, and, with it, a return of brain function through better oxygenation. The immediate elevation of a depressed fracture is likewise dependent upon the necessity for permitting more blood to enter the cranial cavity so that its beneficial effects in terms of oxygen, nutrition and repair can be carried to the cerebral cells suffering from the adjacent injury.

Surgical decompression occasioned by removing an area of bone and opening the dura permits the brain mass to herniate, (i.e. enlarges the cranio-vertebral cavity to permit the return of necessary blood supply), and with this decompression the patient is benefited to the degree that necessary circulation can be continued during the period when the brain is swollen and the cellular edema takes up the volume required by the vascular system to maintain proper blood

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Address delivered before the South Carolina Medical Association at Florence, S. C., April 24, 1935. (Invited guest).

supply for the preservation of life.

Physiological decompression through *dehydration* and *spinal drainage* is of value in that it reduces the volume of spinal fluid and, with the subtraction of this unimportant component, permits a greater volume of blood to temporarily circulate within the confines of the craniovertebral cavity, proving far more effective than any other form of decompression. Spinal drainage should be undertaken in all cases of cerebral trauma, so as to permit the greatest amount of relief of the brain from pressure, due to edema and increase in spinal fluid accumulation. Surgical measures of relief will only occasionally be necessary if this beneficial subtraction of unnecessary intracranial fluid be accomplished early, with consequent improvement in cerebral circulation.

The objective of treatment in cerebral trauma is (1) the preservation of the patient's life, and (2) the reestablishment of the individual as an economic asset to the community.

In the past, the struggle to maintain the existence of the patient has overshadowed the need of protection of his mental faculties necessary for his subsequent period of recovery and economic readjustment. We must coordinate and modify the methods of treatment so as to include in the means of relief these two important factors, and apply the methods for correction of increased intracranial pressure at the earliest possible moment.

The attending physician must carry clearly in mind the fact that death from head injury is not due to the "fracture of the skull" but is brought about by the changes in physiological relationships within the cranial cavity, due to increased hemorrhage or cerebral edema secondary to the trauma.

It has been clearly recognized in recent years that vast areas of the cerebrum may be destroyed or removed without sacrifice of the patient's life. The vital centers concerned with respiration, blood-pressure and cardiac activity lie at the base of the brain in the region of the third ventricle, pons and medulla. These structures are rarely directly injured excepting by bullet wounds or sharp objects which pierce through the deep portions of the skull and tissues at the base.

The disturbance of circulation, due to hemorrhage, edema, or contrecoup injury to the pons or region of the third ventricle comprises the most dangerous complication that may follow cerebral injury and presents the most difficult group of cases with which we have to deal. On the other hand, many patients with extensive cerebral laceration, subarachnoid hemorrhage and direct cortical damage to the cerebrum survive and frequently make excellent readjustments.

Our problem, therefore, involves the appropriate management of cerebrospinal fluid, cerebral edema, and consequent intracranial pressure, as well as treatment directed toward the hemorrhage, by either direct or indirect methods.

DIRECT METHOD. SURGICAL DECOMPRESSION.

In our belief, the only two indications for operation are:

(a). Compounded or comminuted fracture of the skull, with extension into the cerebral substance.

(b). Depressed fractures, sufficiently large to cause pressure and encroachment upon important cerebral areas.

Slight depressions, gutter fractures and collar-button depressions are not considered emergency procedures and can better be left for correction until after the tenth day, when the signs of intracranial pressure and cerebral edema have entirely subsided.

Uncomplicated, focal, epidural, or subdural hemorrhage may of course be considered as an emergency procedure at times, but here, "decompression" is not the objective, but *exploration* based upon careful neurological examination to determine the site of the lesion and its proper approach.

When combined focal signs of subdural or epidural hemorrhage are associated with bloody spinal fluid and cerebral contusion, in our experience, it has been better to delay "exploration" until after intracranial pressure and cerebral edema have been adequately controlled. The removal of the clot can be undertaken at any time that the patient's symptoms indicate the necessity of the measure for relief of edema and intracranial pressure.

It is often better to attack such focal hem-

orrhages after the fifth day, if possible, as the operator will not be confronted with the horrifying experience of opening the dura to release a subdural hemorrhage, only to have the intensely swollen brain expand so rapidly through the dural exposure that it may rupture itself and extrude masses of brain tissue above the level of the wound, making the proper closure impossible and leaving a permanent cerebral hernia. Such added trauma and destruction of the brain are far too common in the experience of the older general surgeons who attacked these problems without a full control of the intracranial pressure and cerebral edema. The danger of infection, as well as the need for destruction of the resulting fungating cerebral mass only adds insult to injury. It has been our policy to bend every effort toward the control of cerebral edema and intracranial pressure, before attempting such an exploration.

In 556 cases of cerebral trauma in the author's series, emergency decompression was undertaken as a measure of last resort in fifteen instances. Even though every other measure of treatment had failed, one is shocked to find that twelve out of these fifteen cases died because of, or in spite of, operative intervention.

With the neurosurgical clinic equipped to care for such complications, and with instruments constructed especially to deal with intracranial pressure problems, such a mortality only too clearly indicates that the patients have *not* been benefited by early operative exploration, and with the exception of three cases such early operative intervention has been unsuccessful. On the other hand, delay of any operative procedure to the tenth day, such as exploration for focal hemorrhage, or elevation of a localized depressed fracture has not been associated with a mortality.

In our experience, we can definitely say that surgical intervention has no justification in cerebral trauma, excepting as indicated above. When all other measures toward control of cerebral edema and pressure have failed, then it will be found that *operation also fails* to preserve these cases even though removal of a complicating clot permitted temporarily better volume within the cranial cavity.

INDIRECT METHOD. (NON-SURGICAL).

The use of "dehydration" in the form of spinal drainage and strict limitation of liquid intake in the treatment of the patient has been responsible for lowering the mortality of cerebral trauma approximately 10 per cent below any figures formerly recorded throughout the country (Mock, Int. Digest. June. 1934).

The routine of treatment and the method of dehydration originally envolved by the author fifteen years ago follows:

I. Period of shock. The evidence of shock has been estimated by us from the following clinical determinations:

(a) subnormal temperature.

(b) Cold, clammy extremities.

(c) Low diastolic pressure, especially below 60.

(d) Pulse usually above 120.

(e) Increase in the respiratory rate.

(f) At times a rising pulse pressure.

II. Period of emergency treatment.

(a) Warm, dry, clothing. Heat applied to the body surfaces. Shock-cabinet, if available.

(b) Atropin sulphate, grain 1/100 (adult dose). Pituitrin (surgical) 15 min. by hypodermic. Strychnin, grains 1/30th by hypodermic.

(c) Ergot and ephedrin if necessary.

The purpose of the above is to prevent further loss of fluid from the skin surfaces, and hence conservation of fluid needed to maintain blood volume. The stimulants are directed toward vaso-constriction of the peripheral circulatory bed, thus improving diastolic pressure, favoring better oxygenation and correcting the vasomotor dilatation associated with shock. Note that cardiac stimulants are not needed, as the heart is active enough. Caffein sodium benzoate, and adrenalin are temporary violent stimulants which should be used only as measures of last resort, or to temporarily tide over a failing circulation.

III. Immediate intravenous administration of sterile, 50 per cent glucose solution. The average dose for an adult ranges between 40 and 50 c.c. and depends upon whether the patient is fat, boggy or alcoholic. Larger doses are used in this type of individual than would

be used for thin, emaciated or dehydrated types.

The purpose of 50 per cent glucose solution, intravenously, is to draw from the tissues the fluid needed for blood volume, and thus replace from the patient's own tissues the needed amount, without the necessity of giving normal saline solution by vein which has been practiced so frequently in the past. Not only does the hypertonic glucose solution assist in reclaiming fluids from the tissues, to replenish the blood volume, and thus improve blood-pressure and consequently circulation, but it also prevents the further escape of fluid into the tissues which is especially important to the cerebral mass and the cerebrospinal fluid spaces where oncoming intracranial pressure will undoubtedly ensue within the next few hours, if the trauma has been severe.

Occasionally it has been necessary to add 50 to 150 c.c. of saline solution along with the glucose, when shock is severe, and it is evident that insufficient tissue fluid may be reclaimed by the glucose to overcome the loss of blood volume. As blood volume loss is not only due to direct hemorrhage, but to temporary loss of the plasma fluids into the tissue spaces, and out over the skin surfaces, it is most important to reestablish this factor, as soon as possible. In our experiences, many times, glucose alone has been adequate and may be repeated in four hours, should the necessity arise.

We have entirely abandoned the giving of large quantities of saline solution, intravenously, because although this promptly corrects the state of shock, it nevertheless precipitates cerebral edema and intracranial pressure, the patients surviving the shock just sufficiently to succumb to respiratory failure from cerebral edema. It is far better to repeat small amounts of saline in doses of from 50 to 100 c.c. where shock persists, than to give an initial large quantity of fluid by vein which would require active measures toward its withdrawal within the next four to eight hours.

A minimum amount of fluid by mouth should be given during the period of shock to combat the oncoming symptoms of cerebral edema, and it has been our custom to consider the period of shock over when *temperature returns to normal or above* and when the pulse diminishes to the neighborhood of 120. If the pulse has been below 120, the index as to the period of shock is determined by the temperature.

2. Control of bleeding points to the scalp, and inspection by probe or gloved finger, to determine the presence of fracture, depression, or compounded comminution should be considered next, followed by cleansing of the wound with antiseptics and simple dressings to meet the immediate requirements. No attempt is made to suture the wound and no immediate operative measures undertaken until the period of shock has entirely disappeared. Immediate x-ray is not to be considered, unless a compounded fracture is evident by initial inspection, or depression, sufficient to be recognized easily and of severe enough proportions to warrant operation.

Every effort should be directed toward the immediate treatment of shock, and the subsequent intracranial pressure which will ensue.

No examinations or clinical procedures have been permitted, other than the above during the period of shock, and no time is lost in instituting active measures to prevent secondary cerebral edema and intracranial pressure.

3. During this interval, temperature, pulse, respirations, and blood-pressure should be taken every fifteen minutes. If bleeding from the ear or cerebrospinal leak is present, the ear is carefully cleansed and tampons soaked in dichloramin-T or 2 per cent mercurochrome inserted in the external auditory canal. If bleeding from the nose is persistent, and requires attention, a finger-cot packed with gauze strips and moistened with mineral oil is introduced into the nasal cavity on the side of the bleeding.

During the period of reaction to shock, the necessary stimulants are repeated or amplified, as the indications may require.

Preparation and orders are given to prepare for the next steps required in the treatment.

4. Spinal puncture is performed as soon as the period of shock has passed. An opportunity to examine the patient neurologically is also afforded after the shock has been controlled. Only where respiratory signs indicate a cerebral compression has a lumbar puncture been permitted as an immediate measure.

Spinal puncture requires a careful pressure

reading by manometer; an 18 gauge, round-point, nickeloid steel, Babcock style of needle is preferred.

The subsequent program of treatment depends upon the character and pressure of the spinal fluid. If the fluid is clear, measures directed toward the subsequent control of intracranial pressure are indicated, with careful and frequent observations of the patient's neurological signs, to determine the possible presence of subdural or epidural hemorrhage. It is in this type of patient, without bloody spinal fluid, that subdural and epidural hemorrhage most frequently occurs. As the subdural and epidural spaces do not communicate with the subarachnoid space, a large hemorrhage of this character may occur without evidence of blood in the spinal fluid, but the clinician should not be misled when clear spinal fluid is obtained by feeling that intracranial hemorrhage has not occurred. In fact, when the spinal fluid is found to be clear, with a pressure of 14 mm Hg. or over, the clinician should seriously suspect the possibility of an expanding lesion, and watch carefully for signs indicated below which establish the presence of subdural or epidural hemorrhage.

If spinal fluid is found to be bloody, the pressure is taken by manometer and all of the fluid which can be obtained (with the patient in the recumbent position) is drained from the spinal canal for the purpose of not only reducing intracranial pressure and preventing immediate subsequent pressure, but also with the hope of removing as much blood as possible. Should the patient show bloody spinal fluid, this in our opinion is the strongest evidence to indicate that subsequent operative exploration is not warranted, or will be of little avail, although occasionally combined subarachnoid and subdural hemorrhage occurs.

The clinician must realize that blood in the spinal fluid indicates a laceration of the brain, or rupture of a surface vessel, and that these two important considerations will need careful treatment during the ensuing days in the hospital.

(a) Blood in the spinal fluid produces obstruction to the outlets of cerebrospinal fluid, and thus for a period of ten days at least, spinal fluid must be withdrawn from time to time to prevent over-accumulation.

(b) When blood is present in the spinal fluid, laceration of the brain, as well as the presence of blood itself, tends toward producing irritation, edema, and swelling, and the necessity for dehydration throughout the ensuing days is imperative, so as to permit adequate circulation of arterial blood, within the cranial cavity, and preserve function of the important cerebral centers that otherwise would suffer for the lack of oxygen, in the presence of edema and pressure.

With the above considerations, sufficient information is now at hand to determine the subsequent treatment. The patient is at once removed to the proper hospital service, and the routine orders and procedures initiated.

There is no group of cases which require more prompt and thorough consideration. The careful and adequate management of the details concerning the immediate control of shock and intracranial pressure have rewarded us by a diminution in mortality of 11 per cent as compared with a former series four years ago.

Too frequently long delays occur in the attempted suturing of the scalp in the receiving ward; in the futile attempt to obtain x-ray examinations at a time when they are not indicated and are unnecessary, and in the delay associated with assembling the necessary requirements for lumbar puncture and other examinations, when a clear-cut program of treatment has not been visualized.

A special table is set up at all times in the receiving ward, containing the necessary stimulants; glucose and syringes as well as a lumbar puncture tray for emergencies of this character. Thus the initial program instituted in the receiving ward, which is imperative in these cases, depends upon the immediate appearance of the house physician, and the patient is well on his way toward adequate treatment by the time he is admitted and transferred to the hospital service.

The receiving ward intern is responsible for these early procedures, and is responsible for the delivery of the patient into the hands of the house physician, so that no time may be lost in

undertaking the second step in the treatment of these cases.

III. Considerations during the first twenty-four hours after admission.

With the period of shock over, attention must be directed toward maintaining blood-pressure and the control of intracranial pressure, as well as the subsequent dressings, or surgical debridement and reconstruction of the areas of laceration.

The importance of preventing restlessness and insuring quiet cannot be over-emphasized so as to prevent further cerebral bleeding and intracranial pressure, from violent efforts made on the part of the patient. Immediate attention should be given to the sedatives to be administered. Morphine should be avoided unless other measures fail, as morphine and its derivatives depress the respiratory center and frequently unnecessarily complicate this phase of the picture. Sodium Luminal, 2 grains (by hypodermic) is given at once, and chloral hydrate, 15 grains, with sodium bromide, 30 grains (adult dose) is given by mouth and repeated, fourth hour if necessary. When the patient is restless though unconscious, double the above dose of the chloral and bromide may be given by rectum in 4 ounces of hot tap-water.

The proper routine orders are then initiated.

1. Elevation of the foot of the bed.
2. Temperature, pulse, and respirations recorded every fifteen minutes.
3. Blood-pressure records every half hour.
4. Pulse pressure (the difference between systolic and diastolic blood-pressure) is charted separately with the pulse, every half-hour.
5. An ice-bag to the head.
6. Complete blood count.
7. Typing of the patient's blood.
8. Urinalysis, if specimen obtainable.

The diet should be a solid one, and if the patient is unable to take this type of food during the first twelve hours, no other substitute has been offered.

Fluid intake and output are carefully measured and charted, and the total fluids are allowed as follows:

(a) If spinal fluid is clear, subsequent spinal drainage is unnecessary. Total fluids are therefore restricted to 20 ounces per twenty-four hours (by mouth or rectum).

(b) If spinal fluid is bloody and repeated spinal drainage is to be undertaken, the total fluids are limited to 30 ounces in twenty-four hours.

It has been found in this series that if the patient's fluids are limited to 20 ounces, including water, soup, milk, tea, coffee, fruit juice, etc. subsequent spinal drainages have revealed that practically no spinal fluid can be obtained after the second day. The intracranial pressure will be thus controlled for the ensuing period and the cerebrospinal fluid system placed at rest, giving the maximum amount of cranial volume to the needed arterial circulation, which is concerned with oxygenation of the brain and repair of the injuries.

It is evident that if repeated spinal drainages are to be performed, with the object of draining the bloody fluid, and assisting in its elimination, sufficient spinal fluid must be obtained at each drainage. In this series an average from 45 to 65 c.c. of spinal fluid has been obtained by lumbar puncture every 24 hours, when the total fluid intake was placed at 30 ounces.

Should the patient be unable to take the solid diet after the first twenty-four hours, a soft or liquid diet may be given, but this form of nourishment must be included in the total liquids allotted for a twenty-four hour period.

Thirst is an early complaint, but can be adequately controlled by warm antiseptic gargles; moistening the lips with mineral oil, or vaseline, and giving small amounts of fluid at regular intervals.

In our experience, solid diet is retained by the patient without difficulty, whereas, soft or liquid diets were frequently vomited and only enhanced intracranial pressure due to their high water content. Great care must be exercised that the patient does not receive water or liquid from sympathetic patients or does not reach a source of supply, as several cases in this series clearly indicated, even up to the seventh day, that fluid intake, when suddenly increased, re-precipitated the stage of stupor and cerebral edema, as well as respiratory depression.

Medication covering the first twenty-four

hours is that concerned with the proper amount of sedatives. The repeating of pituitrin, 15 min. fourth hour, and the use of digalen, if the pulse is over 120, alternating with the pituitrin at the fourth hour, if indicated. Urotropin, 20 grains, three times a day, if the injury is complicated by a cerebrospinal fluid leak through the ear or nose, should be administered. This measure has been employed in the hope of preventing a meningitis, but there is no evidence that it actually does so.

With the blood-pressure records every half hour and the pulse pressure relationship with the pulse rate determined, as well as exact knowledge as to intake and output, the clinician is in a position to rationally control the patient's intracranial pressure.

Should the pulse persist over 120, either 50 c.c. of 50 per cent glucose may be repeated in four hours, or a small amount of saline given intravenously. This need not be deducted from the total fluid allotted by mouth or rectum. If the pulse pressure shows a tendency to rise or approach the pulse rate, the indications for further relief of intracranial pressure are thus established, and another spinal puncture and drainage are necessary, or a magnesium sulphate enema may be given to further enhance the dehydration. The proportions used at the present time are as follows: Magnesium sulphate crystals, 3 ounces: glycerin, 1 ounce: water, 6 fluid ounces. As this hypertonic enema draws fluid rapidly from the lower bowel, even though quickly expelled, the concentration is sufficient to give rise to some dehydration and can be repeated if ineffectual. Should the patient be conscious enough to swallow, 1 1-2 ounces of magnesium sulphate crystals in 6 ounces of water are given by mouth. This hypertonic fluid volume is not included in the 20 or 30 total ounces of fluid allotted to the patient because it is not absorbed.

Still more effective dehydration can be accomplished by the introduction of 50 per cent glucose, intravenously, followed in one hour by magnesium sulphate by mouth or rectum. The glucose tends to draw fluid from the tissue spaces and subarachnoid system, in the direction of the blood stream. This fluid will again reenter the tissues in three to four hours, if not removed from the body, and thus the subsequent administration of magnesium sulphate will recapture this fluid and eliminate it entirely, should the need arise. Glucose if given alone is only a temporary measure favoring the shift of fluid into the blood stream. Magnesium sulphate given alone tends to deplete the blood volume and requires that the blood reclaim its own fluid from the tissues, which is a comparatively slow process. The combination of the two brings about a prompt dehydration when associated with limitation of fluid by mouth or other avenues of introduction.

One contra-indication to the use of magnesium sulphate is apparent. If blood volume is already depleted through shock, hemorrhage, or dehydration, it is not wise to further deplete this necessary circulatory system by the use of magnesium sulphate. It is better to build blood volume again by the introduction of small amounts of normal saline solution by vein, and resort to direct lumbar puncture for the control of the over-accumulation of fluid in the subarachnoid space. Certain thin, emaciated, or dehydrated patients in profound shock require this modification. *It has been a general rule never to administer magnesium sulphate during the period of shock.*

It is evident that the first twenty-four hours following the injury must be devoted to balancing the fluids of the body; controlling intracranial pressure and maintaining adequate blood circulation. The judicious use of 50 per cent glucose solution, will maintain blood volume as desired. If the pulse remains over 120, digalen is given in 20 to 30 min. doses every fourth hour until the pulse reaches 120.

The most important consideration toward which all treatment is indicated is the maintenance of an adequate oxygen supply to the centers of the brain concerned with life, as well as the temporarily disrupted cortical mechanism, so that when the period of stupor and immediate injury is over, there will be a reestablishment of cortical function rather than the massive loss of highly-specialized cells sacrificed during the period of anoxemia and pressure, and subsequently producing the final posttraumatic signs of mental deterioration, loss of initiative, attention, and general mental acuity.

In order that oxygen be properly delivered to the tissue cells throughout the body, it is necessary to maintain diastolic pressure at 60 mm Hg. in the brachials, at all times. This can be accomplished by the proper administration of pituitrin, ephedrin and ergot. The need is to constrict the peripheral vascular bed, and seldom is it necessary to stimulate the heart itself. Thus, caffein sodium benzoate and adrenalin are only used as measures of last resort or to temporarily tide over a failing circulation until readjustment is possible.

IV. Considerations of the following ten-day period of recovery.

During the following ten days of hospitalization, with the period of shock and immediate pressure controlled, x-ray studies of the skull may be made for a permanent record. Spinal drainage should be continued daily, or oftener, if blood is present in the spinal fluid; 10 c.c. of the spinal fluid withdrawn should be kept in a tube-rack for sedimentation and comparison with each daily specimen made. A specimen should be sent to the laboratory for cell count, daily. Spinal pressure should be measured at each puncture by means of a mercury manometer, and the entire amount of cerebrospinal fluid which will drain from the patient (in the horizontal position) should be removed.

Careful neurological studies should be made to determine the condition of the reflexes, the signs of focal hemorrhage, cerebritis, or trauma, and special reference be made to the size of the pupil. Dilatation of the pupil usually indicates the side on which the extravasation of blood is the greater. The deep tendon reflexes are usually lost during the early period following trauma, but promptly reappear, and should be noted from day to day. Hoffmann, Babinski and Oppenheim reflexes are of great importance.

The differentiation between stupor and aphasia is a point that must be clearly established early in the examination. Supra-orbital pressure will produce a drawing up of the face on the side of the pressure. If the stupor is profound, no reaction is obtained. In patients who are aphasic and semi-stuporous, the examiner may determine by this reaction, whether or not there is weakness in the motor supply to the lower third of the face, when the patient is not able to respond or cooperate. This sign is of extreme importance in localizing a lesion on the opposite side, near the surface of the brain.

If the patient is aphasic, even though paralysis of half of the body is present (usually the right), the patient will make a definite effort to remove the stimulus with the unaffected hand, and give evidence of knowing where the pain is being produced, and how it should be removed. If the patient is stuporous, however, purposeless efforts and struggling are present in an effort to get away from the painful stimulus, but no coordinative movements are made to remove the external pressure or to locate the source of pain production.

Patients have frequently been thought to be unconscious when they could neither understand nor reply, and this sign of aphasia is one of great localizing importance, as it indicates a lesion in the sylvian area on the left side, in a right-handed individual.

Should focal signs be present and the patient's general condition satisfactory, immediate exploration is delayed until the intracranial pressure phase has passed and the period of subarachnoid hemorrhage is over. Focal lesions can be adequately dealt with on the fifth, tenth, or fourteenth day, so long as the patient's general condition remains satisfactory. Operative exploration, when indicated, is best accomplished after the seventh or tenth day, should other signs and symptoms remain satisfactory.

Frequently, focal traumatic cerebritis stimulates subdural hemorrhage in such a way that it is difficult to determine whether or not a clot is present. It has been our policy to await the fourteenth to the twenty-first day for signs of clearing of the paralysis, where intracranial pressure is controlled, and the patient's condition is satisfactory. Frequently the operator will expose an area apparently focal enough to suspect a hemorrhage, only to find no signs of a gross clot, but an intensely red currant-jelly appearance of the cortex, with congestion and edema. Such an exploration may be avoided, if careful study of the neurological signs, from day to day, indicates improvement in the symptoms and focal signs.

The patients are maintained on the fluid level allotted to them until the seventh to the tenth day, when, if the spinal fluid is clear, the intake is gradually raised and the patient is finally placed on 32 ounces of total fluid per twenty-four hours as the maximum. When spinal fluid is bloody, the level of 30 ounces is maintained during the period of drainage. This usually lasts up to the seventh or tenth day, depending upon the rapidity of clearing of blood from the spinal fluid, and the appearance of xanthochromia. When spinal drainage is discontinued, it is extremely important to reduce the fluid intake to 20 ounces during the ensuing two or three days, and thus obviate the necessity of repeating the spinal drainage for relief of pressure, which usually occurs after regular spinal drainage has been discontinued. The patient's fluid level is then raised gradually to 32 total ounces per day. He is recommended for discharge upon this level.

V. Posttraumatic Considerations.

The patient is discharged from the hospital with the caution that he must not exceed 32 ounces of total fluid per twenty-four hours during the ensuing three months, and should thirst or hot weather require more, this amount should not be exceeded by more than four to six ounces. He is placed on a "dry" diet, and advised to avoid sweets and salty foods. The latter not only helps to control the thirst, caused by the restricted fluid level, but prevents water-storage in the tissues and maintains a better water balance, without periods of over-loading.

The diet recommendations (see chart) have been established,

DIET INSTRUCTIONS

Total allotment of fluid per 24 hours, 32 oz. (Tea, coffee, milk, water, soup, fruit juices, etc.).

Total allotment of sugar per 24 hours, 3 teaspoonfuls.

Diet should consist of red and white meats, eggs, fresh-water fish, dry cereals and the vegetables listed below in any variety, as well as butter, cheese, nuts. etc.

Portions of food should be moderate.

Meals of equal importance.

Avoid over-eating at any time.

Avoid eating between meals.

One uncooked vegetable (carrot, lettuce, celery) *and* one fresh fruit (apple, orange, half of grapefruit, pear, few grapes, etc.) allowed daily. Where juicy fruits or vegetables, high in water content are desired, exchange for appropriate amount of fluid can be made by *cutting* total liquid intake allotted, for the necessary amount substituted by the fruit or vegetable.

Vegetables recommended

Potatoes (baked, fried, French); Peas, Beans, navy and lima, (Drained of juice and served dry as possible); Carrots, Beets, Parsnips; Rice (dry steamed); Corn.

Vegetables to be avoided

Asparagus, Tomatoes, String beans, Squash, Turnips, Cabbage, Cauliflower, Onions, Spinach, All greens, Sweet potatoes.

For Thirst.

Warm gargle. For water may be substituted orange juice, grapefruit juice, White Rock, buttermilk, tea, coffee, milk, clear unseasoned soup. *Avoid soggy dishes.*

Stews, puddings, macaroni, gravy, apple-sauce. No creamed preparations.

Avoid fruits such as:

Melons, Peaches, Plums, Strawberries, Cherries.

Restrictions:

No salt added to food. No salty foods such as fish, chipped beef, saltines, pretzels, olives, salted nuts, etc. No sweets. No ice-cream, syrup, honey, jelly, cake, candy, canned fruits with syrup sauce. No sweet puddings, desserts or pie.

Desserts (choice of one):

Unfrosted cake (moderate portion). 1 cup custard. 1 junket. Cookies (without icing or sugar). Jello. No sweet puddings, icings, pie, etc.

Allotment of liquids.

Breakfast	6 ozs.
Breakfast to lunch	4 ozs.
Lunch	6 ozs.
Between lunch and dinner	5 ozs.
Dinner	6 ozs.
After dinner	5 ozs.

Suggested Diet Proportions.

Breakfast: Dry cereal (shredded wheat, corn-flakes, puffed rice or wheat, etc.) with *measured* amount of milk or cream. Buttered toast, egg, measured amount of coffee.

Lunch: 1 potato, one other vegetable such as listed above. Red meat, fowl, cheese or fish (unsalted). Bread and butter, custard or junket.

Dinner: 2 vegetables from above, meat or eggs. Measured allotment of tea or coffee, milk or unseasoned soup. Fresh apple, salad or celery. No desserts. Fluids as above.

with the idea of reducing excessive volumes of fluid from this source. Fluid is prescribed at definite intervals throughout the day, and the patient is required to keep an intake and output record, or to report back for follow-up and further advice.

It has been a striking fact, in this series, to note that the former posttraumatic headache,

dullness, loss of attention and disturbance in concentration have been an unusual rather than a usual finding, and this we ascribe to the control of the fluid balance.

On many occasions, patients have themselves reported that when they disregarded the fluid allotment or diet program, they felt dull, had headache, and had themselves returned to their former balance, because, "they did not feel so well when they took more fluid." Alcohol likewise has been forbidden and those who have undertaken indulgence in it have complained of the same return of headache, inattention, dullness, and general loss of concentration.

The rapid return to activity within three months has been a most striking feature in this series; whereas, formerly, six to nine months were required to readjust a patient to his economic surroundings, and frequently posttraumatic neurosis produced partial or permanent disability.

Because of this observation regarding the water balance, and the apparent symptom-complex associated with posttraumatic neurosis, many cases of posttraumatic neurosis have been placed upon this fluid balance, with distinct improvement of their mental acuity and subsequent symptoms. However, the chief value of the method has been in protecting the cerebral centers from pressure during the acute phase of the injury, and in maintaining an adequate and proper balance of pressure following the traumatic episode. In this way the deficiency in the absorption of cerebrospinal fluid has been met and a level of compensation reached.

The posttraumatic signs of headache, dullness, mental depression, impairment of memory, concentration, and loss of initiative are those of general increased intracranial pressure, and when treated as such respond to the general measures surrounding the question of cerebrospinal fluid production and over-accumulation.

As pointed out in other articles, it is our belief that the widespread brain atrophy, localized in the frontoparietal areas, frequently encountered in the post-traumatic is due to the intense edema and hydrostatic pressure affecting these areas. When pressure by an hydraulic cast is present in the areas of gross cerebrospinal fluid collections, intense supracortical pressure is maintained during the early stages. The prolonged chronic pressure secondary to hemorrhage and adhesions in the subarachnoid spaces produces the atrophy so clearly found in the encephalogram. This atrophy so frequently noted in mental deterioration is in reality not a direct response to the trauma, but an indirect factor associated with the dynamics of the hydrostatic mechanism and the ultimate ischemia.

SUMMARY

That a proper water balance with dehydration is capable of reducing intracranial pressure, has been well established. In our experience, *dehydration* constitutes a more adequate control of fluid intake, and a balance of body fluids within the range of proper compensation, by avoiding excesses and limiting fluid accumulations, where possible.

That the measures directed toward this means of relief have been enhanced by the administration of 50 per cent glucose solution, and the proper administration of fluids, determines the success or failure of the control of intracranial pressure and frequently even these means fail, or are inadequate, so that spinal drainage must be resorted to.

In this series, it has been found unwise to resort to surgical decompression for relief of pressure, and the majority of cases operated on for the removal of a subdural or epidural hemorrhage, in the presence of bloody spinal fluid and as a measure of last resort have died because of, or in spite of, the operative intervention.

It is evident that they have been the hopeless group from the start, offering an 80 per cent mortality, taken as an operative series, although only 4 per cent in the entire series. These findings indicate the need for conservatism as to immediate surgical intervention, in the presence of severe cerebral injuries, especially when bloody spinal fluid is present.

It is our firm conviction that where operative indications are present, they are confined to the removal of a focal clot, at an opportune time, and to the repair, reconstruction or debridement of the depressed or compounded fractures of the skull, and that the results obtained from the physiologic dehydration, with

reduction of intracranial pressure, are far superior to the operative means of decompression, and that further damage to the brain is thus avoided.

The use of this method, in the acute post-traumatic cases, has been of great value in preserving the brain structures during periods of acute pressure, and in preventing the chronic intracranial pressure phases following cerebral trauma.

It has been the means of reducing the mortality in this series to a total of 18.33 per cent, and in the uncomplicated cases to an actual 9.0 per cent mortality, for those cases where a pure cerebral death from direct trauma was encountered.

Encephalography has demonstrated that the cortical changes noted in the past, in traumatic groups, occur rapidly following the initial injury. In fact, there is evidence that marked loss of cortical substance in the fronto-parietal areas can be demonstrated within three weeks to two months following this severe brain injury. The clinician must adequately protect the individual against not only the acute phase of intracranial pressure during the immediate period following the injury, but must maintain a proper adjustment of the cerebrospinal fluid circulation for months or years following the traumatic disturbance. In those cases where adequate control has been maintained, post-traumatic sequelae have been practically absent from the subsequent history and there have been only six cases in this series which showed permanent total disabilities.

The problem presented, therefore, is one of immediate control of the volume relationships within the closed cranial spacial walls, so as to permit adequate blood supply, in order to protect the nervous structure and to remove or diminish the cerebrospinal fluid volume or prevent intrinsic edema where possible. Any method which will permit better cerebral circulation or enlarge the cranial cavity by decompression offers the best method now at our disposal for dealing with traumatic injuries of the brain which primarily disturb the *volume relationships* between the circulating blood and cerebrospinal fluid, and secondarily involve the cerebral structures in anemic or degenerative processes.

Subdural and epidural hemorrhages, direct lacerations, and focal depressions must be dealt with as local problems, rather than as a general consideration of cerebral trauma. The patient does not die of a "fracture of the skull" but may die from diffuse edema, hemorrhage, and ultimate cerebral anoxemia.

SOME INTERESTING CASE REPORTS*

By
G. P. NEEL, M.D.
Greenwood, S. C.

CASE 1

In this case I was compelled to rely upon the father for the clinical history. Excellent amanuenses are seldom had even under favorable auspices and usually worthless when obtained from a third party. In this case, however, the history is of real value. William Deal age (111) one hundred and eleven hours. The boy had nursed but not vigorous. Had fretted from birth. Had diarrhea rather than constipation. Protested as well as he could any attempt to move or handle him.

The first thing to attract the parents attention was a greatly distended abdomen on the morning of the day I saw him. Their physician was called at once who referred the boy to me.

I noticed a bit of humanity lying in the arms of his father, in appearance more simian than human, more dead than alive. He was quite fretful and resented interference. The abdomen apparently was as much distended and as tense as it was possible. The distension was evenly distributed over the abdomen. The mass seemed to have been lying upon the intestines, not among or under them.

A tentative diagnosis of appendiceal abscess was made and immediate drainage was advised under ether. The abscess was opened over Munro's point, and a pint of pus, fibrin, meconium and peritoneal fluid (estimated) evacuated. No estimate was made of amount of gasses, drainage was established and wound closed.

The next morning the wound was dressed

*Note: These cases are submitted for their novelty, rather than scientific interest.—G.P.N.

to remove all tubes. Nature had relieved us of this duty. Adhesive plaster one inch wide was placed three times around the abdomen over center of the wound which now lay wide open.

Six years after the operation William was the largest boy I have ever seen for his years and had an excellent abdomen. No evidence of hernia.

Some points of interest. The age of the child. A large firm and well walled off appendiceal abscess. My assistant insisted on a thorough and complete examination to determine the condition confronting us. Where and how did the child acquire the organisms causing the appendicitis. Were they intra or extra uterine acquired. Was it a case of extra-uterine appendicitis. How long had the child had the appendicitis.

Case 11

A negro woman, forty years old, sustained a gunshot wound penetrating the abdomen with perforations. This occured about thirteen years ago. Hospital care was not available for negroes in Greenwood at the time. We operated where we found them and left them when we operated. Later we operated in our offices and ambulanced them home after operation. Strange as it may seem I believe we had as good results then as now with best hospital facilities. I sometimes think we even had better results. We checked and double checked instruments, dressings, anesthetics, everything, and soon drove the thirteen miles to the home of the wounded.

After I had opened the abdomen I begun looking after the perforations, when the anesthetician called for more ether. Strict search revealed no anesthetics of any kind in our kit. Requisition was quickly made upon motor cars and ether-gasoline switch made and operation completed satisfactory to us.

Dr. J. D. Harrison anesthetist, who by the way daddies the gasoline idea, states the duration of gas anesthesia was an hour, Dr. C. J. Scurry, assistant, makes the duration one half of an hour.

The point of interest in this case was and is the ether gasoline switch and the duration of the gasoline anesthesia.

Case III

An Octoroon was delivered of her first child, normal delivery. Two years later a physician was called. After some hours the pains died away and the physician left instructing the patient to send for him as soon as the pains started up. Two years later he was called and delivered her of a normal child. The delivery was normal. Two years later she was delivered of her third baby.

Some time later her physician was hastily summoned. He found the family greatly excited. He was told that the woman at stool had passed the thigh bone of a child. The bone was in evidence. He referred the case to me. I got the same history as family physician. To this day the negroes resent any change of the history.

On examination the mass was easily found. The bones easily felt. A diagnosis of lithopedion made and operation was advised. The abdomen was opened and container and contained were removed. A part of the fluid contents escaped and with it the vilest odor that ever saluted any one's olfactories. In addition to the ordor there was a gas that acted as chlorine irritating all sensitive surfaces.

Every one grew ill, windows were opened. Many were forced to yield to the inclination to empty the contents of the stomach. The operation was completed and the patient made a quick recovery. While I was washing up the orderly brought what appeared to me to be a complete lithopedion, every bone of a child. Two years later, this woman brought forth a boy. Her next labor was twins. She has now eleven children. Not long since I saw the whole family in a cornfield pulling fodder and a happier family I have not seen.

PRESIDENT'S PAGE

I have been an officer of The South Carolina Medical Association in one capacity or another for about twenty years.

I have given my very best for organized Medicine. In the main, I have had wonderful cooperation and support in all activities. The many years that I was a member of the Board of Councilors was most pleasant and satisfactory, the period that I served as chairman of the Board was generally satisfactory in every way. All members worked pleasantly and happily together, there was never any discord or dissensions, we always discussed all matters in open meetings. There was never any visible politics emanating from any member of Council, either in his own behalf or anyone else.

I have traveled over a large part of the state attending medical meetings and have discussed constructive principles pertaining to efficient organized medicine. I have enjoyed the work to a great degree. I trust that all of my activities have not been in vain; I realize that I have made many errors, though, I hope that I have made few enemies and a large number of friends and trust that I have the respect of all. Great improvement in the past twenty years can be seen both in Education and in the application of Scientific Medicine.

The greatest need as I see it for the profession today is unselfish honest constructive cooperation in all activities. Whatever, the Medical Profession want that is just and right, we can have not for the mere asking but by earning.

Much has been said and written in recent years relative to State Medicine Political Control of the Practice of Medicine. The people and politicians want it. If the profession wants State Medicine we will have it.

To the contrary if we do not care for such a system then we need not be burdened with it. It is up to us, it is our task, certainly no one else.

A few thoughts relative to our Medical College:

Do we want a class A Medical School in South Carolina, one that we can all point to with pride? If so we can and will have it.

The State certainly needs it, the people should have it, and the Medical Profession want it. The entire Medical Profession can all testify to that. We must have a class A school or nothing. Honest, unselfish, constructive cooperation by the Medical Profession will continue the College in perpetuity.

To repeat and impress, what ever the Medical Profession wants and should have can be secured, provided we are willing to work for it.

I am one hundred percent for all to earn what they desire and receive. Those who work should eat, those who are able but are not willing to work should not eat.

SAMUEL E. HARMON, M.D.

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THE PROGRESS OF SURGERY IN SOUTH CAROLINA

The early days of our state saw little surgery that was not demanded by grave necessity. Phlebotomists there were, and those who occasionally tapped the ascitic abdomen, or amputated with all the terrors of the times before the development of adequate anaesthesia. Even up to 1830 the field of the surgeon was limited largely to amputation, lithotomy, ligation and the treatment of fractures and dislocations. The operating room was a chamber of horrors, and men shrank from the infliction of pain without reasonable expectation of the success of operation.

The brilliant progress of surgery in the past century is familiar to most of us, and the contribution of South Carolinians is not unrecognized among the historians. For the first time the *Journal* is devoting a special number to the recognition in print of the achievements, past and present, of our own men of surgery. The surgeons of today are made familiar to us by their visible works and their writings in this and other journals. They are enormously refined successors of the man in Orangeburg who in 1779 amputated a mangled leg with the aid of a knife, a carpenter's saw, and red-hot tongs. They likewise follow in the steps of early original workers such as John King of Edisto, who in 1816 operated upon extra-uterine pregnancy by way of the vagina, of Benjamin Simons of Charleston, who did valuable work in bone surgery and published a book on the bones in 1801, of Joseph Glover of Charleston, who excised the spleen, amputated the prolapsed uterus (1813), operated for cataract and for stone in the bladder. Their trephines follow that of John Douglass of Chester (1836), their hysterectomies follow those of John Bellinger and Eli Geddings, their laparatomies come gracefully after those of Bellinger, R. A. Kinloch of Charleston, Cornelius Kollock of Cheraw, and Manning Simons of Charleston. Neurological surgeons today may refer to the nerve suturing of F. L. Parker of Charleston.

These were men "before Lister." Afterward came many who saw the development of modern surgery and the tremendous expansion of the field of operative work. They have seen South Carolina keep abreast of surgical development in technique, equipment, and training. They have seen the growth of hospitals and the extension of the boon of competent surgical care to all parts of the state.

Those surgical papers which today appear in the Journal are fitting continuations of the observations of such early surgeons as Simons, Geddings, Julian Chisolm, and others who pub-

lished books on surgery early in the 19th century, and of the papers on surgery which appeared in the short-lived *Carolina Journal of Medicine, Science, and Agriculture* and other publications.

South Carolina has been the source of remarkable surgery in other parts of the country, where the talents of Marion Sims, Gaillard Thomas, Simon Baruch, Chisolm, Miles, Logan, Gaston, Nott, and others have reflected glory on their native state.

More than once in the past some eminent medical orator has proclaimed that surgery had reached its peak of achievement, yet in a brief time his ideas have been proved false by the development of some new procedure or anesthetic or other refinement. Doubtless unsuspected fields still await the ambitious surgeon, and in the search for them the surgical talent of South Carolina will be well in the front, and eager and competent to develop them whenever they shall be opened.

J. I. W.

GREETINGS AND COMMENTS ON THE CLOSING YEAR

The South Carolina Medical Association and its allied interests have made significant progress during the year now coming to an end. Some of the problems, economic and otherwise faced at the beginning of the year have been at least given careful consideration and in a number of instances agreeably solved. Many of the fears of an economic nature while not dissipated have been somewhat clarified. There is evidence of greater uninimity of action on the part of organized medicine with reference to safe and sound policies of medical economics than hitherto has been the case. This is the one desideratum most hoped for and out of which will come success in the end. Nearly everywhere medical men have been giving much more serious thought to economics in this country than in all the previous history of medicine and that has been most devoutly wished for for a long time. We say this because medical men have the ability, the training and the vision which when concentrated on any one or more problems is very apt to lead to successful issues. This has been clearly proven on many battle-fields for thousands of years in curative and preventive medicine why not in economics.

The membership of the Association shows an increase, the Journal has the benefit of increased advertising receipts and this in turn will provide for improvement. The scientific aspects of the State Medical Association have been remarkably successful throughout the State: A high point in scientific programs for the State organization was reached at the Florence meeting. The Association and the public suffered tremendous losses during the year from deaths in our membership. In the early part of the year we lost our beloved President, Dr. Wm. Egleston. In recent weeks two distinguished members of the profession passed on. We refer to Dr. Waller H. Nardin of Anderson and Dr. Rosa H. Gantt of Spartanburg. Dr. Nardin had been an outstanding figure in his specialty in the Piedmont Section of the State for many years. He gave of his best also to organized medicine in his community. Dr. Rosa H. Gantt was a pioneer as an eye, ear, nose and throat specialist in the South, if not in the United States. She was one of the first, if not the first, woman graduate of the Medical College of the State of South Carolina. She gave largely of her life and interests to the organized work in her native state and with such great success that her brilliant attainments early attracted attention throughout the country in women's medical organizations. She was honored in many spheres of activity both medical and otherwise reaching the highest pinacles within the gift of her fellow workers.

The Association enters upon the new year with the Greenville meeting in the offing, April 21, 22, 23 with every promise of continued growth and development. Under the forceful leadership of President S. E. Harmon not a single interest of the Association has been neglected in so far as it has been possible to bring about satisfactory adjustments. Council has met frequently and given due consideration to every matter brought before it. No appeal has been ignored and no issue denied careful deliberation. This means that the members of the Council representing as they do all sections of the State have the ear of every doctor in their respective districts for any pur-

pose whatsoever connected with organized medicine and this relationship in turn is reflected at every meeting of the Council for the benefit of the entire Association.

The Journal extends cordial greetings to the loyal members of its Staff, to the many contributors who have done so much to make the Journal readable and to every member of the South Carolina Medical Association. We have a great organization with a glorious history which has been sustained for nearly a hundred years on the part of innumerable devotees to the highest ideals of South Carolina Medicine. We approach 1936 with every confidence of continued harmony and effort for the best interests of the organization.

THE MEDICAL COLLEGE CHALLENGES OUR SUPPORT

In another part of this Journal appears the President's Page and therein Dr. Harmon has called sharply to our attention the urgency of the entire medical profession of South Carolina rising to the requests of the college authorities in support of the institution. By this time a letter has been received from the Dean of the Medical College by every doctor in the State requesting that he see his representatives in the legislature personally and urge upon them the necessity for larger appropriations for the College in order that it may continue doing the high grade work that it has been famous for for one hundred and eleven years. This situation has come about because of the rapid progress of medicine and the allied sciences. The necessity for larger appropriations for medical education is world wide and not purely a local problem. This progress in medicine has been directly responsible for the greatly lengthened period of human life and happiness on the part of the public. This increased appropriation for the Medical College at Charleston is requested in order that the public may continue to profit by the great achievements of modern scientific medicine. The College has been notable for graduating large numbers of general practitioners rather than a few highly specialized men. These graduates have gone out into the remotest sections of our State and have there reflected the splendid training received at our Medical School in the prevention and cure of disease. As it stands now South Carolina has fewer doctors per capita than any State in the Union and it is unthinkable that this situation should be ignored by our State Legislature. We wish to support President Harmon one hundred per cent in his appeal for our time honored State Medical College.

REPRINTS!

Type used in each issue of The Journal is held for thirty days and in order to get the benefit of this saving, orders should be received within this time.

PROVENCE, JARRARD AND MARTIN

Greenville, S. C.

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

A Convenient and Simple Method of Early Diagnosis of Scarlet Fever—By I. S. Barksdale, R. M. Pollitzer, and F. P. Simpson, Greenville. (Arch. of Ped. 52: 633, Sept. 1935).

This consists in culturing the throat swab on Loeffler medium, incubating it for six to twenty-four hours, making a stained slide preparation, and if streptococci are present, performing an agglutination (or lysis) test with Schultz-Carlton serum.

Treatment of Fractured Skulls--By C. O. Bates, Greenville. (Am. J. of Surg. 30: 66, Oct. 1935).

Rest above all, close observation, relief of intracranial pressure by glucose and saline solutions, or possibly by lumbar puncture and decompression, come ahead of the care of the fractured bone.

A Brief Consideration of Radical Surgery in the Paranasal Sinuses—By J. W. Jervey, Greenville. (Sou. Med. Jour. 28: 1026, Nov. 1935).

The author finds carbohydrates the curse of the sinuses, and Caldwell-Luc, and similar operations the curse of the over enthusiastic surgeon—and his patient.

Functional Studies in Patients with the Neurodermatoses—By J. M. Van de Erve, Charleston, and S. W. Becker, Chicago. (J. A. M. A. 105: 1098, Oct. 5, 1935).

The authors find that these patients show general instability, and consider that measures directed toward the relief of their nervous exhaustion are most important in the therapy of the skin manifestations.

A Technic for Hepaticoduodenostomy—By Le Grand Guerry, Columbia (Ann. of Surg. 102: 780, Oct. 1935).

A brief discussion, and diagrams illustrating technic of the operation.

Fracture of the Hip Joint—A New Method of Treatment—By A. T. Moore, Columbia (Internat. Surg. Dig. 19: 323 June 1935).

The author describes his technique of local anaesthesia and fixation of the fragments by stainless steel pins. He finds casts and other apparatus unnecessary. Illustrated.

Recent Research on Malaria Therapy of Venereal Diseases—By B. Mayne, Columbia (South. M. J. 28: 750 Aug. 1935).

A review of recent work on the subject.

Transurethral Prostatic Resection with Report of 748 Cases—By T. M. Davis, Greenville (South. M. J. 28: 693 Aug. 1935.)

A summary of the author's successful experience with this operation.

Failure of Intravenous Hydrochloric Acid to Shorten Anaesthesia—By F. W. Kinard and J. van de Erve, Charleston (Am. J. Med. Sciences 190: 242 Aug. 1935).

The authors were unable to produce early recovery in animals anaesthetized with either, nembutal, or paraldehyde.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 295 (28600)

Dr. Reveley (reading):

Negro female, age 48 years, admitted 8-20-35, died 8-27-35.

Tumor mass first noted in abdomen 10 years ago. Profuse menorrhagia for 5-6 years prior to menopause in May '35, no bleeding since. Continued fever for past 3 weeks, with pain and tenderness in both lower abdominal quadrants. Frequency of urination with pain throughout act of micturition. Numerous urinary stones passed two weeks ago, varying in size from grains of sand to a matchhead. Genitals had been painful and swollen for two weeks. "Mouth has been sore recently." Confined to bed for past two months.

Mother died at age 44 from cerebral accident. Other family history irrelevant. Patient married 23 years, miscarriage 20 years ago, no other pregnancies. Previous illnesses: measles, whooping cough, malaria. Luetic and Neisserian infection denied. Laparotomy in 1916, nature not disclosed. Review of systems negative except for "discharge and salpingitis 30 years ago."

Examination: An anxious, acutely ill woman of medium build. Temp. 101.2, pulse 114, respirations 32 per minute. B. P. not recorded. Mucous membranes pale. Eyes, ears, nose negative. Tongue furred, reddened, discrete ulcers on cheeks and lips. Teeth carious, gums bleed readily. Throat congested. Thyroid not palpable, lymph glands not enlarged. Breasts normal. Lungs and mediastinum clear. Heart sounds slightly muffled, cardiac exam. otherwise normal. Abdomen: Scar in midline. "Uterus enlarged to above umbilicus." Abdomen generally distended. Much tenderness and rebound tenderness in lower quadrants. Involuntary muscle rigidity in lower quadrants. Pain on pressure in both kidney regions. Labia: edematous, several ulcers noted. Vulva hyperemic and tender. Pelvic Exam: not recorded.

Laboratory: Urine (8-20), cath. spec., yellow, cloudy, acid, alb. 1 plus, sugar, acetone, casts negative. Leukocytes 20-30 per HPF, blood 4-5 per HPF. Many short motile bacteria. Blood (8-20, 8-22) Hb. 47 per cent, 50 per cent; WBC 25,500; 23,500; polys 88 per cent, _; lymphs 2 per cent, _; monos 8, _; eosinos 2 per cent, _. Smear (8-26) (from mouth?) negative for Vincent's organisms, mixed organisms 4 plus.

G-U Consultation (Dr. Ravenel), 8-21: "Bladder full of foul purulent material. Floor of bladder covered with thick layer of purulent material. Right ureter found and catheterized. No obstruction to No 6 catheter. Left ureter not found." (Cath. spec. from right kidney: amber, clear, INS for chemical tests, epithelium occ., leukocytes occ. blood 0.)

Course: Temp. continuously elevated for first 4 days, 99-102.6, then stayed near normal for 2 days, then rising rapidly on day of death to 104. Pulse followed temp. Resp. 20-55, becoming rapid on day of death. Continued to complain of lower abdominal discomfort and dysuria. Treated by bladder irrigations. Nauseated and vomited on 8-24. Apparently improved slightly during stay, then gradually became weaker and died at 8:45 A. M. on 8-27-35.

Dr. R. L. McCrady (conducting): Mr. Goodlett, will you size up the situation for us?

Student Goodlett: With a history of a tumor mass in the lower abdomen for ten years, associated with menorrhagia, we must consider fibroids of the uterus. The fact that the menorrhagia ceased at the menopause is also suggestive, as it is well known that fibroids cease growing at the menopause. Pressure by a fibroid on the bladder could cause urinary symptoms, and predispose to a cystitis, which in turn would predispose to urinary stones. The pain and tenderness in the lower abdominal quadrants suggest a chronic pelvic inflammatory condition, and the previous history of salpingitis is also suggestive. The fever and leukocytosis

are possibly due to degeneration and infection of the fibroids, altho such infections are rather unsommon. On the other hand, as a faint possibility, the fibroids may have undergone malignant degeneration.

I believe that this patient had fibroids of the uterus, with compression of the bladder and probably of the left ureter, with infection of the urinary tract. I also believe that she had a chronic salpingitis, with inflammatory pelvic adhesions.

Dr. McCrady: Mr. Marshall, what can you add to the discussion?

Student Marshall: I believe that she had fibroids of the uterus too, with gradual occlusion of the left ureter. I believe that a hydronephrosis then developed, followed either by a pyonephrosis or a pyelonephritis. Then, as the infection descended the urinary tract to the bladder, I believe that a cystitis developed, and that the cystitis and the pyelonephritis are the important things in this case.

I do not feel so sure about the salpingitis; it seems to me that there should have been symptoms between thirty years ago and now. I believe that she had a salpingitis at one time, but that it is not important in the case as we now see it.

Dr. McCrady: Mr. Bethea?

Student Bethea: I believe that we must exclude carcinoma, either of the fundus of the uterus or of the cervix. Such tumors frequently extend to the floor of the bladder and cause infection there. I am not sure of kidney infection. The one kidney that was catheterized showed no evidence of infection. Following extension of the tumor to the bladder, I believe that the infection passed through the bladder wall, with a localized peritonitis developing. I do not believe that she had salpingitis, and think that the laparotomy thirty years ago was for the removal of the tubes.

Dr. McCrady: Mr. Elders, will you continue?

Student Elders: To me the most important part of this case is the bladder. We know that she had a cystitis, and the background for the cystitis must be determined. Many cases of cystitis are due to urinary obstruction, either above or below the bladder. The tumor mass in the pelvis was probably a fibroid, probably compressing the left ureter, causing an infection of the left kidney and then of the bladder. The mass could also have been an ovarian cyst or an intra-ligamentous cyst, also with urinary tract obstruction. But this urinary infection must have been very virulent, to cause so high a fever and leukocytosis. The laparotomy was probably a salpingectomy, as she had no pregnancies after that. I believe that she had a peritonitis, probably occurring during her hospital stay, at the time that the pain became less and the fever subsided. The origin of the peritonitis was probably the bladder.

Dr. McCrady: Mr. Keels, can you add something?

Student Keels: I agree with the things that have been said about a fibroid, with urinary tract obstruction and infection. It must have been a very virulent cystitis, probably a gangrenous cystitis. Termination could have been either by a peritonitis from extension from the bladder, or by septicemia from the urinary sepsis.

Mr. Bethea mentioned the possibility of a carcinoma, primary in the uterus, extending to the floor of the bladder; that would have been seen at cystoscopic examination.

Dr. Lynch: I have given Mr. Gaston the preserved specimen (urinary bladder, left ureter, left kidney) and will ask him to describe them and make the pathological diagnosis.

Student F. P. Gaston: The bladder shows extensive destructive changes, extending from the mucosal surface well into the walls. This destruction has a patchy distribution through out the bladder. At one point there is a deep-seated ulceration extending nearly through the walls of the bladder. Its edges are polypoid and fungating. There is no evidence of obstruction or infection of the ureter or kidney, and the kidney appears to be functioning. I believe that this is a carcinoma of the bladder.

Dr. Lynch: Gaston's idea about the case is quite right. There is a primary carcinoma of the bladder, unrelated to any condition in the uterus. The tumor is represented by the large ulcer with the polypoid overgrowth of its edges. The bladder walls are greatly thickened and heavily infiltrated. This cancer is of the epider-

moid form, resembling skin cancer rather than the more common papillary bladder cancer. The bladder had ruptured and there was a localized peritonitis in the pelvis, represented by two large abscess cavities, one in front of the uterus and behind the bladder and the other between uterus and rectum. The more posterior abscess was probably originally part of the anterior one, and became separated by the formation of the peritoneal exudate. The patient died of sepsis.

There was a fibromyoma of the uterus in a sub-mucous position, and this was doubtless the cause of the uterine bleeding that ceased at the menopause. There was no ureteral obstruction although the ureters could not be found from the bladder surface at autopsy; they were probed easily from above. The kidneys were not infected.

Dr. Ravenel: I don't know that I have any apologies to make. The urological examination was unsatisfactory and incomplete. The bladder urine was very foul and the bladder walls were covered with a thick necrotic exudate that prevented good cystoscopic visualization. By good luck I found one ureter and catheterized it. The other could not be found for the same reason that the bladder tumor could not be found; they were obscured by the exudate. I was of the opinion that the patient had a degenerated fibroid of the uterus and a gangrenous cystitis.

Many of the men have talked about ureteral obstruction. I imagine that they were basing those statements on the fact that the left ureteral orifice could not be found. There were no symptoms of ureteral obstruction, such as pain in the kidney region. That the orifice cannot be found does not necessarily mean that that ureter is obstructed; in this case it did not mean that at all.

Such a case as this is the only sort that I can think of where peritonitis follows cystitis, unless, of course the bladder is ruptured by trauma. The bladder wall would have to be extensively eroded for spontaneous perforation to take place, and that would almost have to mean a tumor.

Dr. McCrady: If the men who discussed this case had insisted more on the urinary symptoms, the urine examination and the cystoscopic findings, the correct diagnosis might have been arrived at. These are certainly the most clear-cut facts in the case. Unfortunately, the history is somewhat incomplete, and the case could hardly be accurately diagnosed with the data at hand.

Dr. Lynch, was that fibroid large enough to have been palpated through the abdominal wall "above the umbilicus?"

Dr. Lynch: No. What was felt was very probably the matted intestines about the abscesses in the pelvis.

NEWS ITEM

The South Carolina Medical Association will meet at Greenville, April 21, 22, 23, 1936. The program committee, of which Dr. George W. Wilkinson, Greenville, S. C., is the Chairman, announces that a good many titles of papers to be read have been received, but it is desired that several more titles be submitted at an early date. These titles may be sent to the Committee or to the Secretary of the Association.

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"THE TREATMENT OF VARICOSE VEINS"

(Is Systemic Disease a Contraindication?)

It is important that we have as definite as possible an idea of the contraindications to the treatment of varicose veins by the injection of sclerosing solutions. The opinions of various authors vary from stipulating practically all acute diseases, and chronic diseases of any degree of severity, to only those which are of themselves self evident. To recognize too many will result in withholding the treatment from some who need it most. On the other hand to recognize too few will lead to unwarranted reactions and bad results. To determine the proper mean is the difficulty. Only from the review of large series of cases can reliable deductions be drawn. In this respect it would be well to consider the series of 1000 cases reported by Dr. Edward A. Edwards of Brookline, Mass. and his comments upon it. J.A.M.A. 104:2077, June 8, 1935.

The study is of 1000 patients treated in the circulatory clinic of the Boston City Hospital since 1929. Every patient was examined first by the medical department. The examination varied from a thorough study to a physical examination of the heard and lungs, and urinalysis. Accordingly one may presuppose that the records might err on the side of leaving out systemic disease present in those patients receiving only a cursory examination.

The incidence of more serious diseases with more objective changes was 37.5 per cent. Under heart disease in 123 patients were reported hypertension, arteriosclerosis, myocarditis, auricular fibrillation or cardiac hypertrophy. Angina pectoris was diagnosed in only a few cases, but heart pain was present in many. Eight patients had nephritis, while an additional forty-four had albuminuria. There were seventy cases of respiratory disease including chronic bronchitis, bronchiectasis, emphysema and tuberculosis.

Among other conditions reported were diabetes, syphilis, cirrhosis of the liver, thyroid disease of most types, and peptic ulcer. Malnutrition and dental caries, while not specifically mentioned, were no doubt quite prevalent as at least half of the patients were destitute, receiving help from a city welfare department.

As to the treatment, every one of these patients received at least one injection of quinine and urethrane and some as many as ninety-five. Other substances less frequently used were sodium chloride 20 per cent, sodium chloride 15 per cent with glucose 25 per cent, or invert sugar with sodium chloride. In 75 cases the saphenous vein was ligated preliminary to the injections.

The results were as follows. There were no deaths which could be attributed to the treatment. The systemic disease from which the patient was suffering could not be said to have been affected adversely in any case, including those with diabetes, nephritis, and cardiac decompensation. Of course in many cases the chronic diseases progressed and patients died as a result of them, as would be expected.

There were occasional cases of vomiting, dizziness, and moderate allergic shock after the injection of quinine. Aside from the above, only three untoward general reactions were noted, one case of vomiting and dizziness, and two cases of sllight uterine bleeding; in all three instances the patients recovered uneventfully.

From these results the author takes the positive stand that severe systemic disease is not a contraindication to the injection treatment of varicose veins. It goes without saying that sugar solutions are to be avoided in diabetic patients and kidney irritants (not quinine) in nephritic patients, and that bed-ridden patients are not fit subjects due to the danger of propagating thrombosis with danger of embolism.

Furthermore the point is made that a patient with one of these considered diseases is benefitted by being rid of varicose veins and their complications, ulcer and phlebitis. This is important from relief of pain and the clearing up of infecion. Infection is probably always present in varicose ulcer and in the affected leg. Like-

wise it may be present in phlebitis. It stands to reason that the patient would benefit by clearing up such longstanding foci.

No pregnant case is included in this series due to a hospital ruling to that effect. However in private practice the author has successfully used this treatment in painful or large and thin walled varices llikely to give trouble. No attempt is made to obtain a complete sclerosis as the tendency is for these veins to subside greatly after the termination of the pregnancy.

Editor's Note: It is hoped that the foregoing review will not encourage carelessness in applying the injection treatment of varicose veins. Needless to say its purpose is to point out that it may be safely used in a class of patients very much in need of it and from whom it is often withheld. Possible complications are ever present. Conservatism and care are always necessary, but especially so in treating patients additionally burdened with serious systemic disease.

BOOK REVIEWS

DR. COLWELL'S DAILY LOG, a brief, simple accurate financial record for the physician's desk. Published by Colwell Publishing Company, Not Inc., Champaign, Illinois.

Forms found in the Daily Log

In the Front of the Book

1. Title Page
2. Calendar
3. Instructions for Use.
4. Illustrated Forms

Daily Pages

Following Each Month

1. Inoculations
2. Business Summary
3. Expense Sheet One
4. Expense Sheet Two
5. Personal Account
6. Surgical Record
7. Narcotics—Appointments

In the Back Part of the Book

1. Obstetrical Waiting List
2. Annual Summary
3. Record of Deaths

The perfect book-keeping system for doctors has not yet been discovered but this book will meet the needs of a large number of physicians regardless of the kind of practice they are engaged in. It has many good features and most important of all is easy to operate. It is a very helpful system when the time comes for reporting to the income tax collector. The book is in the ninth year of its publication and that speaks well for its continued popularity.

NAMES OF SURGICAL OPERATIONS—Western Surgical Association. Price $3.00. Presented with the compliments of the Committees on Names of Surgical Operations of the Western Surgical Association.

The development of surgical literature has been so enormous as a result of the vast field over which surgical operations have spread that it has been difficult to even approach a standardized nomenclature. Of course this feature is not even confined to surgical science but to many other sciences. Anyway the book is the product looking toward standardization of many of the leading surgeons of the country acting as committees and the work has been well done and will be a landmark for a long time to come.

THE STOMACH AND DUODENUM: By George B. Eusterman, M.D., F.A.C.P., Head of Section in Division of Medicine, The Mayo Cllinic, Professor of Medicine, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Donald C. Balfour, M.B., M.D. (Tor.), LL.D., F.A.C.S., F.R.A.C.S., Head of Section in Division of Surgery, The Mayo Clinic, Professor of Surgery, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Members of the Staff, The Mayo Clinic and The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. 958 pages with 436 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, $10.00 net.

This is a book of nearly a thousand pages and comes from one of the outstanding clinics of the world. Nowhere, perhaps, has there been an equal wealth of material from which to compile studies on the diseases of the stomach and the duodenum. These organs have been subject to consideration for many centuries but of course only the development of modern medicine and surgery as evidenced by this significant contribution could possibly clarify many of the problems involved. The physiology of the stomach and duodenum has been well presented by Alvarez while the history has been duly

considered by Wilbur. The pathology of course is all important and no one is more competent than MacCarty to delineate the same. The examination of these patients is now done on a scientific basis. Then comes the question of whether medical or surgical treatment for many of the lesions discovered. It is fortunate that in such a great clinic as the Mayo Clinic with its large medical as well as surgical divisions every form of treatment that promises success may be evaluated. Much has been said in the public press recently about Diaphragmatic Hernia. A chapter in this book shows that this lesion is by no means a spectacular rarity at the Mayo Clinic. The illustrations are most excellent and all in all this is one of the best books on the subject ever published in this country.

A MARRIAGE MANUAL, A Practical Guide-Book to Sex and Marriage by Hannah M. Stone, M.D., Medical Director of the Birth Control Clinical Research Bureau and of the Marriage Consultation Centers at the Community Church and Labor Temple, New York and Abraham Stone, M.D., Adjunct Urologist at the Sydenham Hospital, Co-Director of the Marriage Consultation Centers of the Community Church and Labor Temple, New York. New York—Simon and Schuster—1935.

Many books along this line are of no scientific value whatever. This one is. The book is written in the form of hypothetical consultations between a physician and a young couple about to be married. A kind of catechism in other words. There is enough of physiology and anatomy for a fairly accurate basis for the inquiries. It would seem to be a safe manual to put in the hands of the more intelligent candidates for matrimony.

A TEXTBOOK OF BACTERIOLOGY: By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health at the Indiana University School of Medicine. 551 pages with 121 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, $5.00 net.

This book is the outcome of a desire on the part of many teachers for a shorter text book, both for the student and for the practitioner of medicine. The opening chapter is on the History of Bacteriology and then comes the Bacteriology of everyday life. The succeeding chapters present in a very practical way the most important phases of our knowledge of bacteriology and its application to modern life in medicine and out of it. For a refresher course to the busy doctor this is the best book we have seen.

DISEASES OF THE THYROID GLAND, By Arthur E. Hertzler, M.D., Chief Surgeon, Halstead Hospital; Professor of Surgery, University of Kansas. With a chapter on Hospital Management of Goiter Patients, By Victor E. Chesky, M.D., Chief Resident Surgeon, Halstead Hospital. Third Edition, Entirely Rewritten. St. Louis, The C. V. Mosby Company.

The volume before us is a real monograph and by and large monographs have contributed more from an inspirational point of view than great systems of medicine. In the monograph the reader, particularly, if he knows the author personally and has visited his clinic relives the activity of the surgical amphitheater as he peruses the personal contributions of the master. This book comes from a small clinic as the author says in his preface to the first edition, "a small country hospital." The various chapters include not only the surgical side but the medical aspects of the thyroid glands. There is an important chapter on the hospital management of goiter patients. There are 181 beautifully done illustrations. The publishers have done a fine piece of work. It is a beautiful book. The price is $7.50.

PREVENTIVE MEDICINE AND HYGIENE, By Milton J. Rosenau, Professor of Preventive Medicine and Hygiene Harvard Medical School; Professor of Epidemiology, Harvard School of Public Health; Formerly Director of the School of Public Health of Harvard University and the Massachusetts Institute of Technology; Formerly Director of the Hygienic Laboratory, U. S. Public Health Service.

With Chapters Upon
Mental Hygiene, By Abraham Myerson
Sewage and Garbage, By Gordon M. Fair
Vital Statistics, By John W. Trask
Statistical Methods, By Carl R. Doering
Conservation of Vision, By J. Herbert Waite
Contraception, By Eric M. Matsner
Sixth Edition, D. Appleton-Century Company, Inc., New York, London.

It has been nearly twenty years since this classic in preventive medicine was first published. At that time it took its place in the front rank both as a text-book and for public health workers and others interested in the subject. This is the sixth edition. It has been extensively revised and entirely reset, in fact, changes have been made on almost every page.

These subjects appear for the first time: Venereal Disease, Contraceptives, Sex Hygiene, Heredity and Eugenics, Drug Addiction, Vitamins and the Deficiency Diseases, Infant Mortality, Industrial Hygiene and Diseases of Occupation, Scarlet Fever and Undulant Fever.

This particular volume numbers among the contributors some of the most distinguished writers on public health in this country. In other words it is a sort of joint production and therefore still more authoritative and interesting than otherwise might be the case if it were strictly speaking a monograph.

THE HUMAN FOOT, ITS EVOLUTION, PHYSIOLOGY AND FUNCTIONAL DISORDERS, By Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. Morningside Heights: New York, Columbia University Press, 1935.

This is the most fascinating resume of our knowledge about the human foot that has ever come to this reviewer's desk. Even a brief contemplation of the quackery that has grown up in connection with the disabilities of the human foot shows how wide spread a need there is for more concentrated effort by science, such as is the aim of orthopedic surgery for a saner contemplation of this part of the human anatomy. The uses and abuses of the human foot have been well considered in this volume. The illustrations are very good both in comparative anatomy and human anatomy. The physiology has been discussed in an admirable way. In the examination and diagnosis of disorders of the human foot the X-ray has come in for major praise. The author estimates that from the examination of college students about forty per cent of them have disabilities capable of limiting the normal activities of the individuals. Columbia University has rendered a distinct service in publishing this book.

RUSSELL A. HIBBS, PIONEER IN ORTHOPEDIC SURGERY, 1869-1932, By George M. Goodwin, New York: Morningside Heights, Columbia University Press.

Dr. Hibbs lived a colorful life and contributed to the outstanding epochs in orthopedic surgery of the world. Some of the chapters in the book are as follows:

Child and Student
Intern and House Surgeon
Surgeon in Chief
Hospital Administrator
Innovator in Surgical Technique
Defender of Surgical Fusion
Recognized Prophet
Teacher and Medical Economist
Sponsor of the Kane Fellowships
Man and Citizen

This book would make an attractive Christmas present to any doctor who is remotely interested in the wonderful advances of orthopedic surgery. The price is only $2.00.

BEHAVIOR DEVELOPMENT IN INFANTS, A Survey of the Literature on Prenatal and Postnatal Activity, 1920-1934, By Evelyn Dewey. Published For The Josiah Macy, Jr., Foundation By Columbia University Press.

Behavior problems may be classed among the impressive challenges of modern medicine and particularly to the devotees of mental hygiene and the pediatricians in general. Perhaps, for the first time this book brings together in one place a satisfactory summary of our present knowledge in this field. Some of these conclusions have been the result of child development clinic activities now rather a growing phase of child welfare interest. A large section of the book discusses neonatal behaviour but the greater part attempts to crystalize in the period of infancy the best thought of the world since 1920. The bibliography, therefore, is extensive and carefully compiled.

SURGERY: QUEEN OF THE ARTS and OTHER PAPERS and ADDRESSES; by William D. Haggard, M.D., F.A.C.S., D.C.L., Nashville, Tennessee. Professor of Clinical Surgery, Vanderbilt University School of Medicine; Surgeon to Vanderbilt Hospital and St. Thomas Hospital; President, Southeastern Surgical Congress; former President of the American Medical Association, the American College of Surgeons, the Inter-State Postgraduate Medical Association of North America, the Southern Surgical Association, and the Tennessee Medical Association; formerly Lieutenant-Colonel, Medical Corps, U.S.A.; Consultant in Surgery, Mesves Hospital Center, A.E.F. With Foreword by William J. Mayo. 389 pages with 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, $5.50 net.

Few surgeons are better known in America than Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University, School of Medicine, Nashville, Tennessee. A teacher in one of the most forward looking schools in this country and yet one who has found the time to make extraordinary contributions to organized medicine. Both in the amphitheater and on the rostrum of numerous medical societies Dr. Haggard has inspired medical men of all ages toward greater achievement in their profession. The author of this book is well known in South Carolina. Just a few years ago he was guest speaker at a meeting of the State Medical Association. Many students from South Carolina have enjoyed the privilege of sitting at the feet of this master surgeon and teacher. There are several addresses touching, one may say, the romance of medicine deeply. It will be a sad day when romance is eliminated from medicine by the pursuit of ends wholly material. There is much of history in this book for the author has lived through and been an important figure in the development of medical history in America. The book also through the various addresses is a valuable volume on clinical surgery. There are many illustrations throughout the volume.

LAW AND CONTEMPORARY PROBLEMS, Published Quarterly, January, April, June and October by the Duke University School of Law. David F. Cavers, Editor. Editorial Advisory Board: L. L. Fuller, H. C. Horack, Malcolm McDermott. (The Editor and Advisory Board

are members of the Faculty of the Duke University School of Law).

School of Law, Vol. 11, October, 1935, Duke University, No. 4.

The out-put of the Duke University Press in whatever field deserves careful consideration. This quarterly comes from the School of Law and for the most part concerns the medical profession as will be seen by the contents.

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Index.

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INDEX

The Journal of the South Carolina Medical Association

VOLUME XXXI

January to December 1935

Anemia in Infants and Young Children ---- 54
Artificial Pneumothorax ---- 213
Brucellosis ---- 99
Cancer of the Cervix ---- 10
Cardiovascular Renal Disease in the Negro ---- 95
Clinical and Pathologic Consideration of the More Common Lesions of the Breast ---- 76
Clinical Aspects of Primary Pulmonary Carcinoma ---- 169
Diagnostic Significance of the Visual Fields ---- 25
Differential Diagnosis of Brights Disease ---- 151
Discussion of Some of the Fundamental Principles in Caring for a Patient With An Acute Abdomen ---- 212
Book Reviews:
---- 67, 141, 142, 143, 165, 185, 254, 255, 256, 257
Editorials
A. M. A. Meets at Atlantic City ---- 106
Cancer Number ---- 1
Conference of State Secretaries and Editors ---- 177
Death of Dr. C. A. Neuffer ---- 23
Death of Dr. Frank Durham ---- 24
Death of Dr. William Egleston, President, South Carolina Medical Association ---- 47
Dr. R. C. Bruce, President Elect ---- 107
Dr. J. I. Waring Elected Assistant Editor of Journal ---- 216
Epoch Meeting House of Delegates American Medical Association Chicago ---- 21
Florence Meeting Largely Attended ---- 106
Fourth District Society Meets at Gaffney, 4 P.M., October 15 ---- 178
Guests for the Florence Meeting, April 23, 24, 25 ---- 45
Greetings and Comments on the Closing Year ---- 247
High Spots of the Florence Meeting ---- 69
Medical College Challenges our Support ---- 248
Medical College of South Carolina to Celebrate Founders' Day Exercises ---- 195
Observations at the American Medical Association, Atlantic City, June 10 to 14 ---- 117
Piedmont Post Graduate Assembly ---- 158
Piedmont Post Graduate Clinical Assembly a Great Success ---- 177
Post Graduate Obstetric Course Now Under

Way ---------- 70
Post Graduate Obstetric Course ----------106
Post Graduate Obstetric Course by McCord a Great Success ----------135
President Elect A. M. A. to visit Columbia, April 8 ---------- 44
Progress of Surgery in South Carolina ---------246
Report of Reference Committee, Special House of Delegates ---------- 21
Special Session of House of Delegates ---------- 43
State Board of Health ----------178
Tribute of Pee Dee Doctors to Dr. F. H. McLeod 44
Workmen's Compensation Bill ---------- 24
Eye, Ear, Nose and Throat Department:
Influence of Anatomic Structure in Diseases of the Nose and Ear ----------196
Simplified Management of After Cataract -----182
Untoward Results of T. & A. Due to Allergic and Endocrine Imbalances ---------- 62
Use of Coley's Mixed Toxins in Ophthalmology-218
Gleanings from 146 Caesarian Sections ---------- 83
Head Injuries: Their Management and Treatment ----------233
Importance and Ease of Prescribing Diets ------ 49
Ischio Rectal Abscess and Rectal Fistula ---------167
Jaundice: Its Differential Diagnosis ----------187
Macrocytic Anemia ---------- 5
Malignant Melanoma (Black Cancer) ----------129
Management of Therapeutic Malaria for Syphilitic Meningo-Encephalitis (General Paresis) -------173
Memorial Address for Dr. William Egleston ----144
Minutes:
Report of Secretary Treasurer ----------134
South Carolina Medical Association ----------121
Nervous and Mental Diseases—Department:
Alcohol—Mental Disorders ---------- 17
Obstetrics and Gynecology—Department:
Chronically Infected Cervix Uteri ---------- 64
Committee on Maternal Welfare ----------223
Instructions in Obstetrical Nursing ----------160
Occiput Posterior, An Obstetrical Problem ----124
Pathological Conference, Medical College of the State of S. C. 38, 59, 107, 138, 161, 179, 197, 219, 250
President's Address ----------103
President's Page ---------- 4, 245
Precancerous Lesions and Early Cancer ---------- 13
Pediatrician Looks at the Tonsil ----------145
Pentobarbital Sodium as an Obstetrical Analgesic-210
Present Status of the Radiologist in the Treatment of Breast Cancer ---------- 30
Report of the Treasurer ----------104
Surgery—Department:
Black Spider Bite ----------126
Chronic Cystic Mastitis ----------217
Diagnosis and Treatment of Injuries of The Head ----------137
Operative Procedures for Appendicitis --------- 63
The Diagnosis and Treatment of Acute Injuries to the Head ----------183
Some Interesting Case Reports ----------243
The Treatment of Perforated Peptic Ulcer ----200
The Treatment of Varicose Veins ----------253
Subphrenic Abscess ----------207
Surgery In Roper Hospital ----------231
Surgical Judgment In Our Approach To the Acute Abdomen ----------227
Treatment of Fractured Skulls ----------132
Treatment of Severe Cutaneous Burns ----------189
Use of Some Common Drugs in Urology ------- 34
Welch Bacillus Infections. Treatment by Autofiltrate Method ----------111
Society Reports --41, 6, 116, 118, 124, 176, 184, 194, 203
South Caroliniana ----------164, 249
Special Articles:
Preliminary Program, Eighty-seventh Annual Session, South Carolina Medical Association, April 23, 24, 25, 1935 ---------- 48
Medical College to Mark Founding ----------201
Some Facts About Florence, The Place of Meeting ---------- 71
News Items ----------199, 202
Woman's Auxiliary ----------37, 119, 224

AUTHOR'S INDEX TO ORIGINAL ARTICLES

Asbill, D. S. ---------- 25
Baxter, O. D. ---------- 10
Bailey, C. W. ---------- 54
Barnes, L. P. ---------- 49
Bates, C. O. ----------132
Boone, J. E. -------34, 173
Bradley, J. A. --------151
Cathcart, R. S. -------231
Clinkscales, G. S. ----213
Dawson, G. R., Jr. ---111
Fay, Temple ----------233
Guerry, L. ----------227
Harmon, S. E. --------212
Hearin, W. C. -------- 83
Lynch, K. M. ----------129
Mayer, O. C. ---------- 99
McLeod, F. H. -------111
Neel, G. P. ----------243
Norris, J. C. ---------- 95
Parker, J. D. ----------210
Peery, T. M. ----------187
Pollitzer, R. M. -------145
Prioleau, W. H. -------167
Rousseau, J. P. ------- 30
Sheridan, W. M. ------ 13
Smith, W. A. --------169
Tyler, G. T. ----------207
Waring, J. I. ----------231
Walsh, J. N. ----------189
Wellbrock, W. A. ---- 76
Wilson, Robt., Jr. ---- 5

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THE JOURNAL
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CONTENTS

ORIGINAL ARTICLES:
Subphrenic Abscess. By G. T. Tyler, Jr., M.D., Greenville, S. C. 207
Pentobarbital Sodium as an Obstetrical Analgesic. By Jack D. Parker, M.D., Greenville, S. C. 210
A Discussion of Some of the Fundamental Principles in Caring for a Patient with an Acute Abdomen. By S. E. Harmon, M.D., Columbia, S. C. 212
Artificial Pneumothorax. By Grady S. Clinkscales, M.D., Anderson, S. C. 213
EDITORIAL 216
SOCIETY REPORTS 215
SURGERY 217
EYE, EAR, NOSE AND THROAT 218
PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA 219
OBSTETRICS AND GYNECOLOGY 221
WOMAN'S AUXILIARY 221

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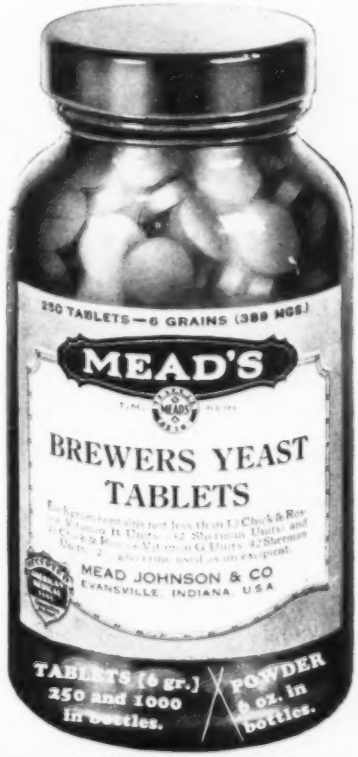
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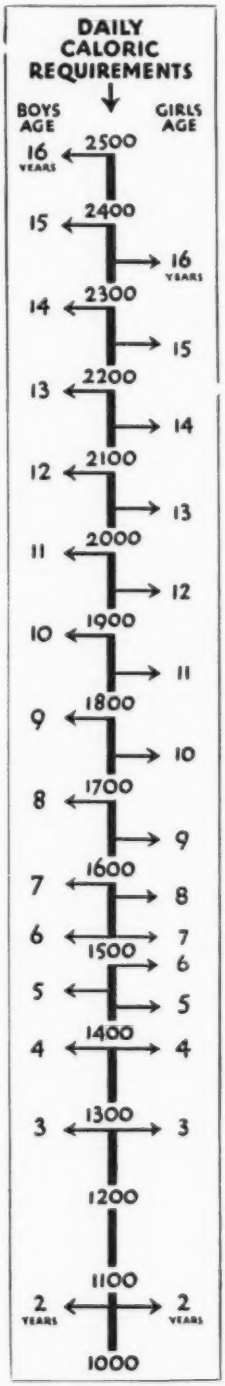
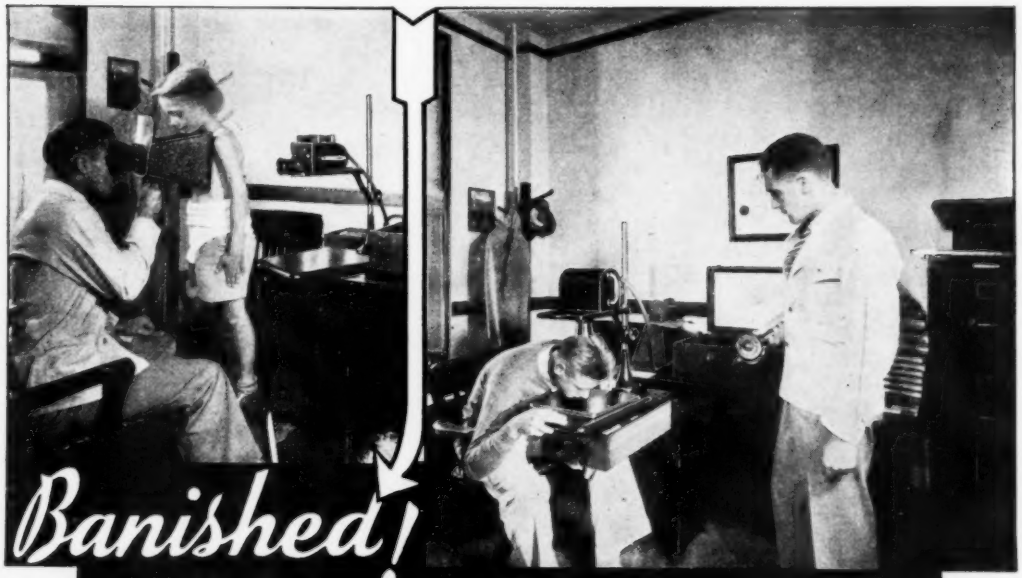


Figures from Kugelmass's "Feeding in Infancy and Childhood"



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(1) Journal Nutrition 8, 449 (1934)
Journal American Dietetic Association 9, 295 (1933)
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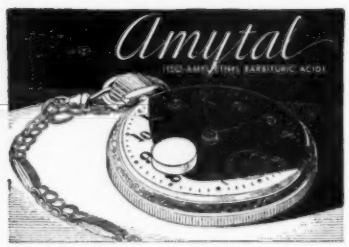

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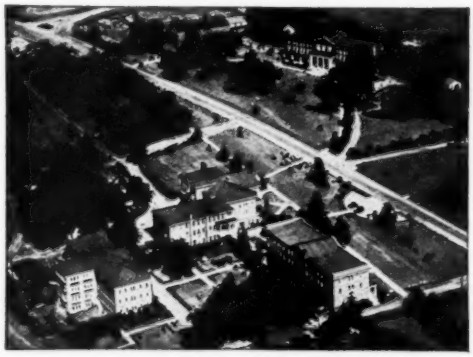

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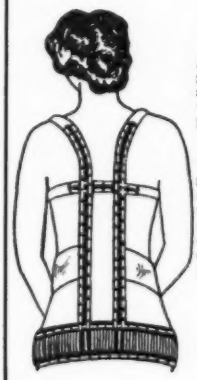

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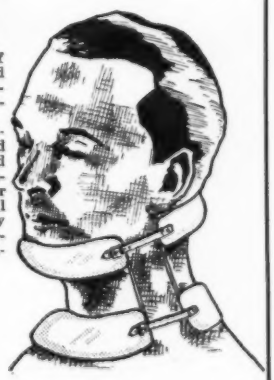

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FOOD IN THE OPEN CAN

● One question commonly asked concerning canned foods is whether or not the contents of the can should be removed to another container immediately after opening. This question has its origin in the belief that if food is allowed to remain in the can after opening, it will absorb an injurious substance from the can and thus become hazardous to the health of the consumer.

For this belief there is not the slightest foundation of fact. Its origin probably lies in the old "ptomaine" concept of food poisoning. Why it should persist in the light of present day knowledge is a mystery. The belief that food must be emptied immediately from the can has been as thoroughly discredited as the "ptomaine" theory of food poisoning (1).

Food poisoning is usually caused by the ingestion of food containing certain bacteria or their metabolic products. It is, in most instances, the direct result of improper preparation, handling, or storage of food (2) (3).

We have previously described in these pages how all canned foods are subjected to thorough heat treatment which destroys not only pathogenic bacteria and their products, but also the most resistant organisms which may cause spoilage. Consequently, the freshly opened can is the cleanest container in the average kitchen.

There is, therefore, no reason from the standpoint of food poisoning why the food must be removed immediately after the can is opened. In addition, food will spoil no faster or no slower in the open can than in any other open container. The same precautions should be used in its preservation as are used for any other cooked food.

With certain foods, it is desirable from the standpoint of quality to remove the food from the can. Such foods, usually those of an acidic nature, may act slowly on the can after air is admitted and small amounts of tin and iron may be absorbed. The traces of these metals have been shown by a Government laboratory to be entirely innocuous (3), but iron in particular may impart a slight taste to the food.

Modern science has dispelled the old belief that, from the standpoint of health, food must be removed immediately from the can. The cooperation of the medical profession in dispelling this old and unfair prejudice against their products is earnestly solicited by the members of the American canning industry.

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(1) Journal American Medical Association, 90, 459, 1573 (1928)

(2) Preventive Medicine and Hygiene, M. J. Rosenau, Appleton-Century Co., N. Y. 5th Edition

(3) Food-Borne Infections and Intoxications, F. W. Tanner, Twin City Printing Co., Champaign, Illinois

This is the fourth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Association.

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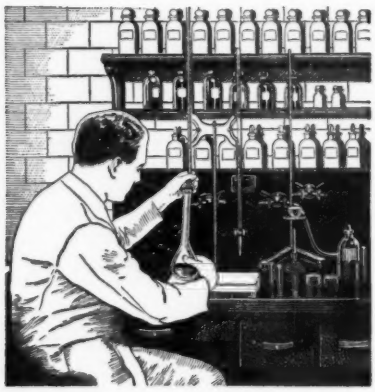

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

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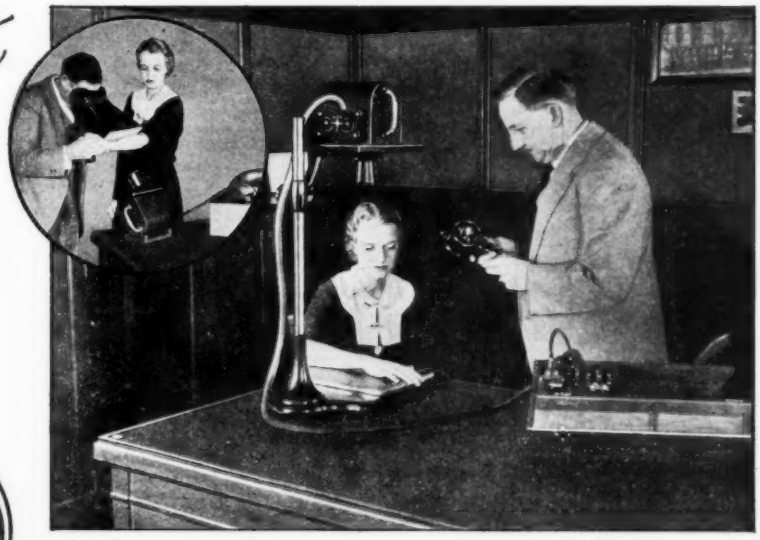

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Basic Principles suggested by
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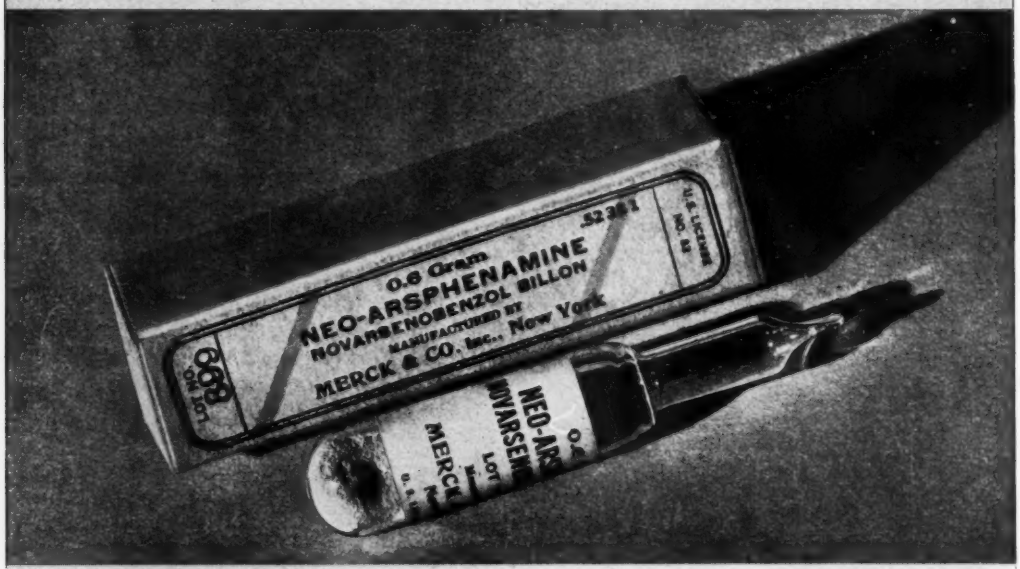
The use of Neo-arsphenamine Merck in the Continuous Method of Treatment may be relied upon to produce satisfactory results.



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SOLUTION
Benzyl Methyl Carbinamine 1% in Liquid Petrolatum with 1/3 of 1% Oil of Lavender.
COUNCIL ACCEPTED
For local application to shrink the nasal mucosa. Use as a spray or apply with a dropper.
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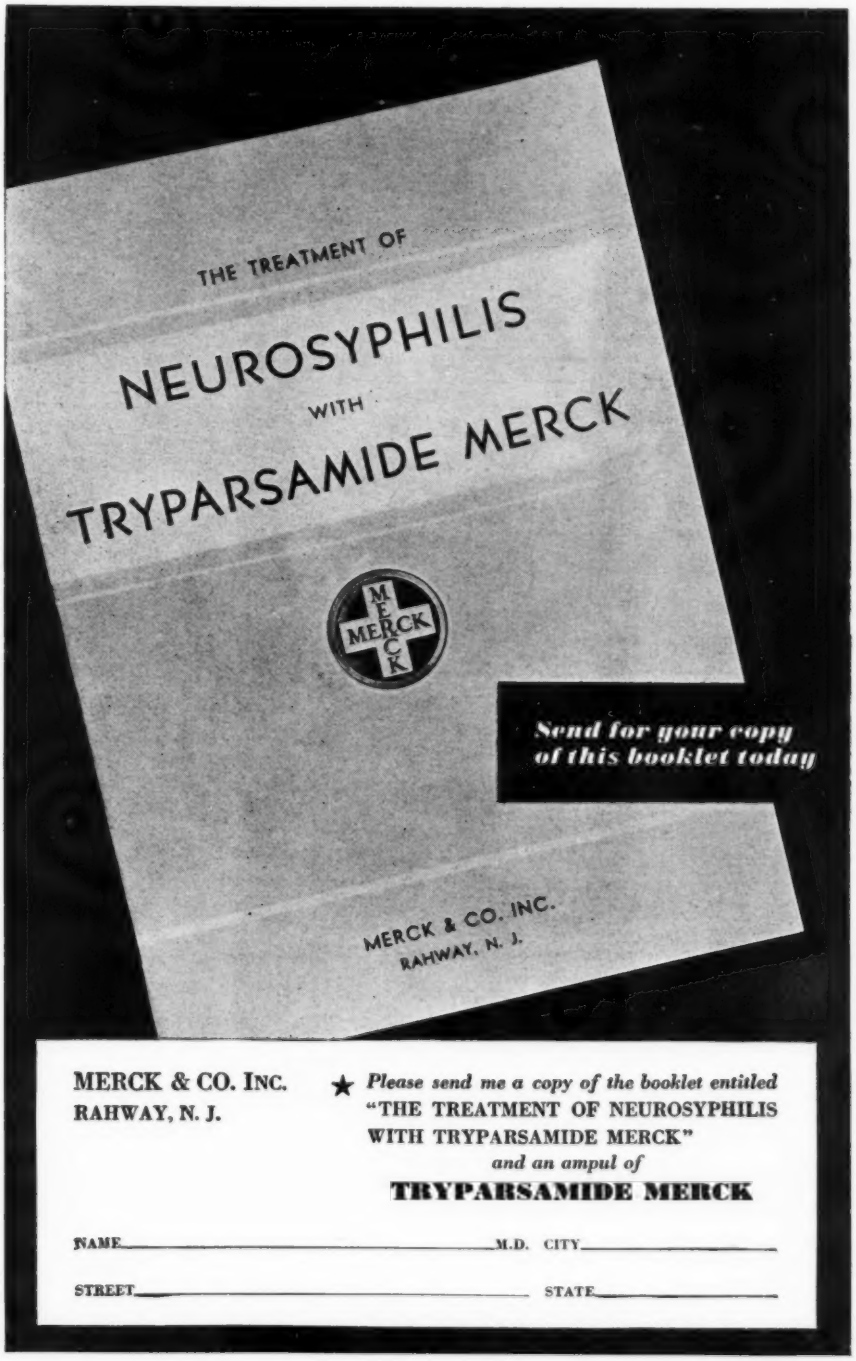

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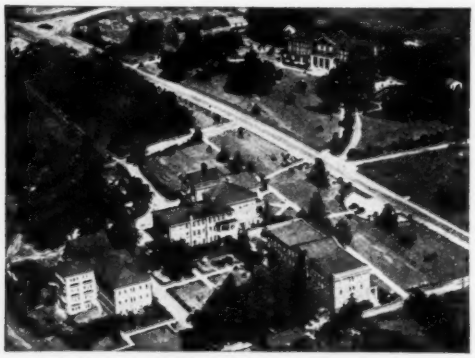

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Gives perfect uplift. Is worn with comfort and satisfaction. Made of Cotton, Linen or Silk. Washable as underwear. Three distinct types, many variations of each.

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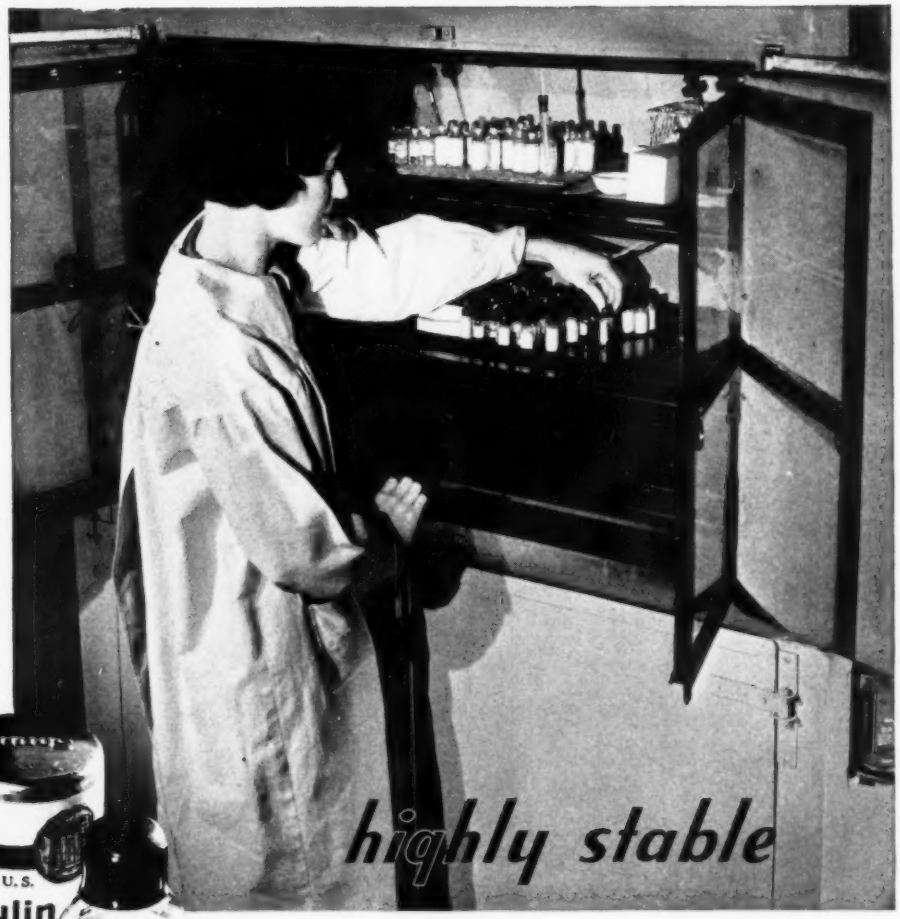

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Cigarettes give a lot of pleasure to a lot of people.

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